

# AN UPDATE FROM AQUASURE



I wanted to begin this week's column by thanking the many people that attended the Community Site Tours recently.

The feedback from the day was very positive, with many people amazed at the scale and complexity of the project and how much has been achieved by the construction team in such a short time.

Many people were interested to see the beginnings of the green roof and the new 225 hectare coastal park, while some of our younger guests were just excited to see the monster trucks and cranes on site!

It was a wonderful day and I'd like to personally thank Wonthaggi Rotary Club, the SES and St John Ambulance for helping to make it such a success.

Out on the desalination plant site, construction continues. With most of the buildings on site taking shape or nearing completion, we are now working to install the countless mechanical and electrical components to make the desalination process function.

With these activities underway, it is timely to discuss how we will go about the complex task of commissioning the desalination plant.

The performance and reliability tests that each component of the plant must pass before it can start producing and supplying commercial quantities of water are extensive, and the quality standards extremely high.

Degrémont has built and operated more desalination plants around the world than any other company. They are the world leaders in reverse osmosis desalination and have been planning for commissioning since this project began.

As readers will know, the project includes five key components – marine structures, tunnels, desalination plant, transfer pipeline and the underground power supply.

Each of these components must pass a series of individual pre-commissioning tests and checks, before they all come together as one.

Some of these pre-commissioning tests are already underway.

On the plant site, 'bubble point testing' is currently in progress on the 72 dual-media pressure filters (DMPFs) that will filter seawater before it is desalinated.

The DMPFs operate very much like a swimming pool filter. They are loaded with layers of gravel, sand and crushed anthracite coal, through which seawater is pushed under high pressure. Salt water passes through, while any other waterborne particles are snagged and trapped in the layers of media.

On the floor of each DMPF are thousands of nozzles, which have a dual function.

They allow filtered seawater to flow out through the bottom of the DMPF but can also be operated in reverse to allow cleaning or 'backwashing' of the layers of gravel, sand and coal.

In a bubble point test, the DMPF is partly filled with water and air is then pushed through the nozzles at a designated pressure.

If a level and steady stream of bubbles is released from every nozzle, the DMPF has passed the test.

No bubbles, or bubbles appearing before the designated pressure is achieved, or different sized bubbles appearing from one nozzle to the next can expose even the tiniest defect.

It's a simple test of physics, but one of the most widely used integrity tests in the world.

With pipeline construction nearing completion, we are also preparing for pre-commissioning of the transfer pipeline over the coming months, and I'll talk about this process next time.

**Chris Herbert** CEO, AquaSure

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