Operator

August 2021 The Water Industry Operators Association of Australia Magazine

2021 WATER INDUSTRY OUTLOOK

ROSSARDEN BEST TASTING WATER IN THE WORLD

BIRDS EYE VIEW AWARD WINNING ROSSARDEN WTP

AWARD WINNING QUEENSLANDERS RECOGNISED

CORPORATE MEMBERS NEWS

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From the MD's Desk

Many exciting things have happened since the last edition of Operator went out to Members in May 2021.

After winning silver medals three times in the past six years, an Australian water sample has been judged the Best Municipal Tap Water in the World at the International Water Taste Test in Berkeley Springs, USA. Congratulations to TasWater, TRILITY and all the operators from the Rossarden WTP for winning the award. There is more information about the Rossarden WTP later in this edition.

Following 15 months with no face to face events, we were extremely excited (and relieved) to be able to stage the 2021 WIOA Queensland Operations Conference and Exhibition in Toowoomba in June. A COVID outbreak in Victoria a week or so out from the event almost derailed the entire conference.

Many Members would not be aware that only two WIOA staff members, who were already in Queensland, were able to attend the conference. That it was able to proceed at all was the result of the fantastic support from the Queensland Advisory Committee members and their employers, plus several volunteers. It is this sort of community spirit that makes WIOA special and we greatly appreciate all your help.

In early 2021, WIOA was contracted by Queensland Health to undertake a review of the training and competency required of operators in all 17 Queensland Indigenous Councils. This project looks at all the competencies needed by the operators from the catchment right through to the customer tap. The Acuario certification platform has been expanded to allow it to record all the training information for the Councils including units in the catchment, safety and networks fields.

This project may open the door for the Acuario platform to be used more widely to record all training data in a single place.

Finally, with the COVID Delta variant causing issues in many Australian States, we have had to postpone the Victorian conference. It will now be staged on 24 & 25 November 2021 in Bendigo.

Whether the NSW conference will be able to proceed in Tamworth in late October is also uncertain at this stage but we are currently planning for it to go ahead. We will keep our members informed of any decisions about either event in the coming weeks.

George Wall

Victorian Conference moves to 24 & 25 November

www.wioaconferences.com.au/vic-2021

August 2021

Cover Mayor Mary Knowles and TRILITY's Mark Collins celebrate the World's Best Tasting Tap Water from Tasmanian regional town Rossarden.

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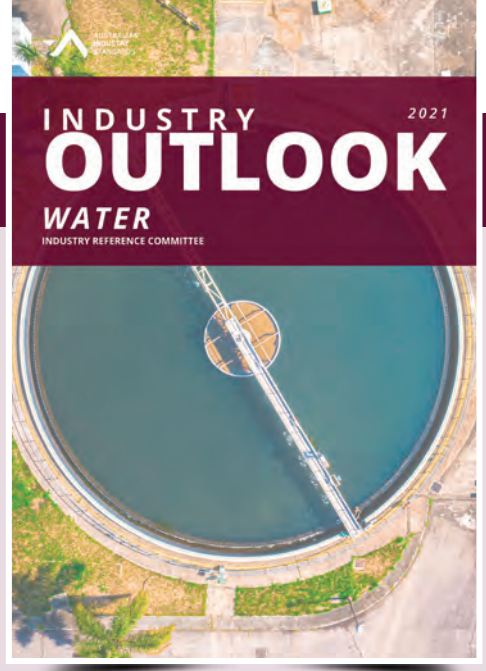
In this issue

Member Profile - Andrew Povey

Team Leader Civil Maintenance

Employer Wannon Water
Nickname Pove
Favourite team Hawthorn, Melbourne Storm and Renegades
Pets English Pointer (Max)
Favourite food Steak (Blue)
Least favourite food Coriander
Favourite TV show Suits
Worst TV show Home and Away
Favourite Movie Gladiator
Favourite Musical artist/s Ludovico Einaudi
Ambition in life To have no regrets
Hobbies Sport and Fishing
Best Trait Willing to help
Worst Trait Also willing to help
Who do you admire? Alistair Clarkson and Luke Hodge.
Favourite saying or quote I'm not different from you, I'm different like you.
Four people you would invite to dinner Luke Hodge, Harry Moffitt, Paul Kelly and Rosie Batty.
How long have you been a WIOA member? I have been a member of WIOA for 16 years and I have been a Victorian Advisory Committee Member for one year.
Your involvement with WIOA, what contributions are you hoping to be able to make? I hope to be part of a growing network of dedicated members that are willing to share information, experiences and future Industry growth.
How long have you worked in the water industry and what attracted you to it? I started as an apprentice plumber in 1986 and continued plumbing through until 2000. After a short illness I took up a role as a trainee with Glenelg Water in the Water and Waste Water Treatment team. With my plumbing background I was poached away from treatment and across to the Civil Maintenance team and after a short period in the role I was the successful applicate of a Team leader position where I remain at this stage. As I'm almost 50 now it is fair to say I just love water and the industry.
What do you enjoy most about your job? The unknown from day to day is what I really like. If I wanted stability and structure I have been a painter or bricklayer.
What are the major challenges in your current role? I see the challenges in the industry being that some older staff that have worked in the industry for long periods are finding it really hard to evolve as fast as the industry is.
Thoughts on the water industry at the moment? It's in good shape compared to some other countries and the regulatory standards that we have to meet are of a high level. As modern technologies are growing at a fast rate. Unfortunately I feel we don't know what we will need to be skilled in by 2040 as technology is growing faster than the education system. It's a good ride but it's also a fast ride so we cannot stop to smell the roses.
How do you relax? By a river or lake with some nice music, food, drink and friends. The fishing does not need to be good if you have good people around you.
Where do you live and the best thing about it? Western Victoria, also known as the Great South Coast where we have a wide variety of industry, leisure activities and good economic growth. You are only an hours drive from mountain ranges to surf coast and lovely beaches.

2021 Water Industry Outlook



The Industry Outlook provides an overview of water industry trends, new and emerging skills needs as well as proposed Training Package development to address these workforce needs. Produced by Australian Industry Standards it provides a snapshot of a continually evolving story for the sector.

The Water industry offers vital services fundamental to national prosperity and economic growth, generating an estimated $22.68 billion of revenue in 2020-21. The industry employs nearly 27,700 people across water catchment supply, sewerage, drainage services and water pipeline transport (networks). In 2021 the following industry trends were identified:

- **Wastewater and COVID-19**
- **COVID-19 and Digital Technologies**
- **Automation, Robotics, and Innovations in Asset Management**
- **Industry-Specific Cybersecurity**
- **Customer Service in a Digital Age**
- **Ageing Workforce**
- **Shortage of Trainers**
- **Open Channel Meter Certification**
- **Network Asset Maintenance**
- **Flood Site Operations**

The water industry plays an important role in tackling COVID-19. Wastewater testing can detect traces of COVID-19 long before the symptoms are displayed among communities. The industry has programs in place to track and monitor the presence of the virus in wastewater.

COVID-19 has also expedited the utilisation and implementation of digital platforms which are reshaping customer behaviour. The water industry needs to be agile in managing the relationship with customers to increase their value proposition.

There is also a growing social expectation that organisations should provide increased customer service and improved transparency of their services.

The implementation of technological advancements in the Water industry are improving operations and processes. The industry is utilising data analytics, simulation and modelling to collect real time data to optimise processes. This technology can forecast the behaviour of the network, predict faults before they occur, and reduce energy costs. Visual and acoustic equipment are being used in pipe inspections to detect leakages or locate blockages.

The industry landscape will continue to be monitored to ensure a resilient and agile workforce that can adapt to new technologies, changing work practices and regulations.

The water industry outlook is available from the Australian Industry Skills website.

www.australianindustrystandards.org.au/skills-forecast/water-industry-outlook/

(03) 9604 7200

Tasmanian Town has the World's Best Tasting Tap Water

WIOA conducts taste tests across Australia to celebrate the water operators and their crews, who despite the impacts of COVID-19 and before that drought, fires and floods, ensure we have clean safe water, which is essential to keep us alive.

This years Australian champion from a small regional town in Tasmania, which was once deemed unsafe for consumption, can now boast to having the best tasting tap water in the world.

Water from the Rossarden Water Treatment Plant in the state's Northern Midlands (Australias Best Tasting Tap Water in 2020) has won the Best Municipal Water for 2021 at the Berkeley Springs International Water Tasting event in West Virginia, USA. The global event judged water from five continents, 14 countries and 19 US states. This is the first time water from Australia has won the prestigious award, which is a major coup for the nation and the state.

Rossarden was part of TasWater's 24glasses Regional Towns Water Supply Program, focused on the removal of all public health alerts on Tasmanian drinking water. Just over three years ago, Rossarden was under a Do Not Consume notice. The provision of safe, clean and reliable water supply underpins the health and wellbeing of communities, which was the driving motivation behind the 24glasses program. The program saw public health alerts removed from 29 Tasmanian towns and drinking water systems through the installation of 17 new water treatment plants, 16 reservoirs and more than 70 kilometres of new trunk mains.

Seeing a town where so recently you could not even drink the water, now recognised as having the best drinking water in the world is an incredible result and is a great source of pride to TasWater.

Mark Collins celebrates the international success of the Rossarden team.

This global recognition reinforces that the standard of treatment processes implemented is truly world class.

The Rossarden Water Treatment Plant is run in partnership with water utility services provider TRILITY, which built and designed the facility as part of TasWater's 24glasses Regional Towns Water Supply Program Work in 2018.

The Tasmanian State Government injected $200 million of much needed capital into TasWater to accelerate its capital works program allowing more Tasmanian households to benefit from modernised infrastructure over the next decade, just like the residents of Rossarden have.

The international recognition acknowledges that TasWater is delivering great tasting, safe and reliable drinking water to Tasmanians at a world class standard.

New Award - WIOA Team of the Year

The Team of the Year will receive WIOA Practical Guides to the value of $2,000.

With support of TRILITY, WIOA has a new award recognising teams in 2021. The award will recognise teams of employees working in any part of the water industry that have made an outstanding contribution to their workplace or community.

The award focuses on those who have gone above and beyond their normal roles and recognise their dedication, initiative, talent, enthusiasm and contribution for a range of activities.

Examples include:

- implementation of new infrastructure and solutions
- maintaining services through difficult times such as weather events, fires, and the pandemic
- providing support to their communities, other employees, other businesses, or the water industry
- development of innovative programs or initiatives

wioa.org.au/awards/national-awards/team-year/

All in a day's work!

In June 2021, TasWater's Rossarden water treatment plant won the Best Municipal Water in the World. This was a first for Australia and a great achievement for TasWater, WIOA, TRILITY and the people of Rossarden.

Up until August 2018 the water supply in Rossarden was subject to boil water or do-not-consume notices, when TasWater commissioned TRILITY to design, build, install and commission a bespoke water treatment plant. Since then, the plant has been operated and maintained by a small team of four from TRILITY; Mark Collins, Mark Congerton, Rob Muller and Matt Smit.

TRILITY designed and built a bespoke water treatment plant to manage the raw water source coming in. Coupled with the hard work in maintaining the plant and ensuring the correct dose rates over the last two and a half years has really paid off for the local community. For this tiny, remote community in Tasmania to have the best drinking water in the world goes to show that everyone in the water industry is trying to achieve the best quality water possible.

Just getting to the plant takes dedication in winter.

It is certainly true that you don't need the biggest plant to deliver the best quality water, what you do need is a passionate, diligent and dedicated team. And the team at Rossarden has proven to be just that, getting to the remote plant takes dedication in the winter months battling snow, ice and dangerous, unpredictable road conditions.

The team acknowledges that it's quite a responsibility to ensure safe, clean drinking water for the community. They are proud to provide a service most people take for granted, providing good potable, safe water for the community they work and live in.

The team's response was quite humble, when asked about winning the **Best Municipal Water in the World**

"The day-to-day running of the plant includes water sampling and tests. We then use the results to make adjustments that ensure the plant is running the best we can. **Matt Smit**"

"We're just doing our jobs to the best of our ability. It was a proud achievement and one of teamwork. In fact, we have not had any breaches on water quality at any of the plants we operate over the last two and a half years, which is quite an achievement in itself.

We test the inline instrumentation and calibrate every visit on specific analysers and then once a month we calibrate and verify all the instrumentation. By verifying the results, that's when we make our decisions on tweaking different dose rates. We have not had any breaches on water quality at any of the plants over the last two and a half years, which is quite an achievement in itself. **Mark Congerton**"

"There's not been one issue that we've not been able to sort out. **Rob Muller**"

The Rossarden team from left to right Mark Congerton, Robert Muller, Mark Collins & Matt Smit.

"Other maintenance tasks include cleaning the membranes, calcite top ups and monitoring the granular activated carbon (GAC) contactors. If we do have a dirty water event, the design of the plant means that we can either disable the plant for a period of time or run it at a lower flow rate to allow more contact time on the GAC and calcite.

As a team we've gotten to know the plants intimately that we can run them really well. We have a routine and know how to react to certain events. It was exciting when we found out it was the first time Australia had won the award. **Mark Collins**"

2021 Queensland Conference

587 ATTENDEES

81 EXPO SITES

The 45th Queensland Water Industry Operations Conference and Exhibition saw just on 600 people from across the water industry attend the event at the Clive Berghofer Recreation Centre in Toowoomba on 1 & 2 June 2021.

Stuart Boyd from Mackay Regional Council provided the Opening Address on the theme of thinking outside the box - how do we change to deliver processes for the future. He challenged delegates to consider the cost benefit of ever increasing treatment standards for wastewater plants.

Narelle D'Amico from Bundaberg Regional Council delivered the conference Keynote Address providing a well-received insight into the topic of cultural change and what has it got to do with operators? The need to have appropriately skilled operators is vital and with an aging workforce and pending retirements, flexibility in sharing skills and system knowledge is paramount.

At the Awards Dinner held on Thursday evening, Shane Bandiera from Cassowary Coast Regional Council won the Leon Henry Memorial, 2021 Queensland Operator of the Year award. Shannon Thomas from Unity Water was the winner of the 2021 Young Operator of the Year Award. The Award for the Queensland Operator of the Year (Civil/All Rounder) went to Shane Bambrick from Urban Utilities. WIOA congratulates all of the award nominees for the outstanding contributions they make to the industry.

Others recognised at this event included William Smith and Michael Gow from Logan City Council who won the Award for the Best Paper by an Operator and Tony Schultz from Seqwater won the Best Poster Award. The Brian Davis Award for Best Paper Overall was awarded to Anthony Domanti from Logan Water Partnership/WSP.

The COVID SAFE seating looks a bit different to the conferences of the past.

The event included a comprehensive exhibition with a slightly smaller expo than normal to meet COVID spacing requirements. The expo comprised 81 sites where companies exhibited the latest in equipment, services and process technologies available to the water industry.

WIOA also hosted the Queensland Main Water Tapping Competition with a great roll up of spectators cheering the teams on, even in the rain on the Thursday. The team from Gold Coast Water & Waste – Kool Tappings recorded the best time to win the title yet again. Toowoomba Regional Council and Reece Civil supported the competition with $1000 donated to Animal Welfare League Queensland on behalf of the competition winners. It was great that ***qldwater*** was able to live stream the tapping competition out to others in the Queensland water industry.

After running a Charity Bowls Day earlier in the year and a raffle at the conference, Cr Nancy Summerfield from Toowoomba Regional Council, announced the WIOA charity donation of $4,000 to WaterAid. Thanks to all the members and supporters who helped raise these funds.

Queensland Conference Award Winners

Operator of the Year
Shane Bandiera
Cassowary Coast Regional Council

Young Operator of the Year
Shannon Thomas
Unitywater

Operator of the Year Civil/All Rounder
Shane Bambrick
Urban Utilities

Best Paper Overall
Brian Davis Award
Anthony Domanti
Logan Water Partnership / WSP

Best Paper by an Operator
1 William Smith & Michael Gow
Logan City Council
2 Martin Coromandel & Michael Zinn
Urban Utilities
3 Ben Haddock
Southern Downs Regional Council

Best Poster by an Operator
Tony Schultz
Seqwater

IXOM Water of Origin Taste Test
Queensland
Livingstone Shire Council

Queensland Mains Tapping Competition
Dan Lee & Gavin Stacey
Kool Tappings - Gold Coast

Best Exhibition Site
Ron Bergmeier Award
Mass Products

Queensland Operator of the Year

Shane is Queensland's Best

Shane Bandiera from the Cassowary Coast Regional Council was announced as the 2021 Leon Henry Memorial, Queensland Operator of the Year at the Awards Dinner at the WIOA Queensland Conference in June.

Shane has had a long and distinguished career in the water industry since joining the then Johnstone Shire Council in 1985 as a labourer. He has worked his way through a variety of roles including as an operator in both the water and wastewater treatment fields. He has been in his current role of Coordinator Treatment Water and Sewerage since 2010.

Shane has continued to build his water industry knowledge and expertise across his whole career, completing Certificate II, III & IV qualifications along the way.

His knowledge has been called on many times to help improve the operations of the treatment plants. Process changes made on the back of plant trials such as changing to ACH and the use of streaming current detectors at the Innisfail WTP have now become part of normal operations. He has been an integral member of the in-house team that has developed and implemented the Drinking Water Quality Management Plan on behalf of Council.

Several process upgrades and operational improvements at the wastewater plants have also been instigated by Shane. These include investigations to allow wet weather bypass at the Innisfail STP, changes to chemicals to improve plant operational performance to reduce costs and power consumption, along with odour reduction strategies.

Shane ensures WH&S is a part of daily prestart meetings at all treatment facilities. He participates in audits of plant facilities with WH&S officers and is always looking for opportunities to reduce workplace hazards.

He has a real connection with the operators and supports and encourages them to think for themselves and to contribute their own innovative ideas. At times it has been difficult to attract qualified operators to the region, so Shane created a program of developing trainees from local junior staff. This has proven very successful.

His commitment to the community goes above and beyond, often personally contacting customers about water quality issues and diligently arranging for any necessary testing or flushing actions. During rainfall events, he always takes his computer home so he can monitor water quality parameters.

Queensland Operator of the Year - Shane Bandiera.

He has been one of the main contact people for all the external regulatory organisations relating to water and wastewater matters and often manages communications with stakeholders including the Water Regulator, Queensland Health, nursing homes, hospital and media.

He has actively and continuously engaged with other FNQ Councils to investigate new or innovative practices. Shane was one of the founding members of WIOA's FNQ working group that arranges the annual Interest Day in Cairns. He shares his own knowledge where possible, including by winning the Best Paper Award at the 2006 WIOA Conference on the aftermath of Cyclone Larry. He was made a member of WIOA's IDIOTS fraternity in 2018 in recognition of his ongoing support of WIOA.

For winning the Operator of the Year award, Shane gets to join the WIOA contingent on their tour to New Zealand in May 2022 (we hope), courtesy of award sponsor AWA Queensland Branch.

Shane accepts his award from Sandra Hall representing AWA Queensland.

Queensland Operator of the Year - Civil/All Rounder

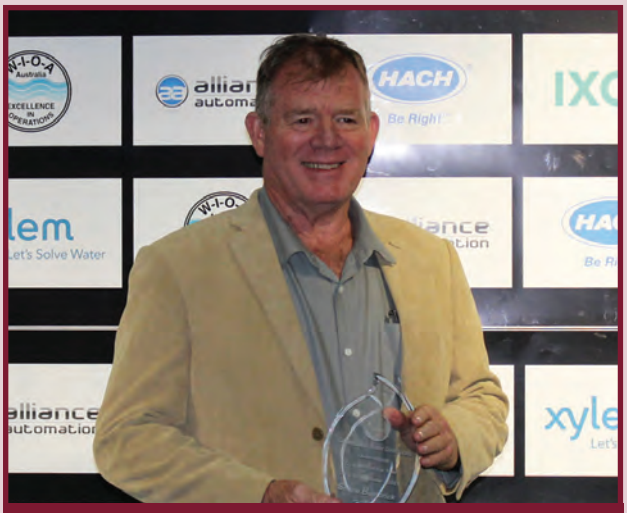
Another Shane - Another Win

The ***qldwater*** Operator of the Year (Civil/All-Rounder) is Shane Bambrick from Urban Utilities.

Shane has more than 40 years in the Plumbing and Water Industry, with the last ten of those years at Urban Utilities. Shane is currently the Field Technical Lead and is used as a trainer and mentor for new staff due to his extensive knowledge and is often the "go to" Water Industry Worker for repairs.

Shane goes above and beyond to educate the wider Urban Utilities organisation in understanding what goes on in the field and has created a number of short videos about leak detection and basic repairs that he shoots with his personal drone and completes with music and video editing and shares with staff via Yammer.

Shane is a well-respected leader who demonstrates an ongoing commitment to safety - he gets involved in the introduction of new valve turners (and has developed a video for that too).



*Shane accepts the **qldwater** Operator of the Year (Civil/All-Rounder) Award.*

Queensland Young Operator of the Year

Shannon takes out top gong

Shannon Thomas was extremely surprised to hear her name called out as the Queensland Young Operator of the Year at WIOA's Queensland Conference Awards Dinner. "Well I cried on stage," she said.

"I got up there and thought 'oh my goodness this is the worst that I'm crying. I was really proud of myself, and just really happy."

The Maroochydore Treatment Plant Assistant Operator won the award where operators under 35 years of age from right across Queensland's more than 70 water service providers are eligible to be nominated.

qldwater sponsors the award, and Carlie Sargent said that award winners were selected on feedback from industry representatives. In Shannon's case, she was nominated to ***qldwater*** by multiple industry representatives, who had either worked with her or knew of her through the WIOA and ***qldwater*** networks.

"Our judges agreed with the recommendation that she is a fantastic young operator," Carlie said.

The award was the cherry on top of a successful conference for Shannon. She had already received good feedback following her presentation about the Maroochydore Sewage Treatment Plant's digester refurbishment and reseeding process. Shannon's paper focused on the testing and other processes that the team members undertook to assess the value of the digester operations over a three-year period.

Shannon noted that the WIOA conference was a great networking and information-gathering opportunity. "I did a lot of talking to other people, asking them about problems we have here (at the STP) and seeing if they have any resolutions," she said.

Congratulations, Shannon, and enjoy your win!

Queenslanders Water of Origin Victory

In a warmup prior to the big State of Origin Rugby game in Townsville, Livingstone Shire Council took out the honours for Queensland in the Ixom Water of Origin Taste Test against the best NSW has to offer from Port Macquarie Hastings Regional Council.

This long awaited "play off" follows Livingstone's success in the 2020 "Best of the Best Queensland Water Taste Test" run by the Queensland Water Directorate. Queensland has opened the gap ahead of its NSW counterparts, five wins to three in the Water of Origin challenge.

The real winners were the operators who look after the systems and supply such fantastic water to their customers daily. The water from the Woodbury Water Treatment Plant has gained due recognition thanks to the work of Angus Bowles and the operators Kelly, Shako, Kristy, Leonie, Barry and Gary, who make sure the water provided to their community is safe, and tasty, every day.

As well as the operational team, the Livingstone Shire Council has a shout out for the Maintenance and Network teams who make sure the water systems keep on working the way they should.

Livingstone Shire Council team: Angus Bowles, Anthony Shackleton, Leonie McIntosh, Kelly Ball & Michael Dalton (absent Gary McKenzie & Kristy Walker).

Leak Detection Dog at Work

They may be welcome on Take Your Dog to Work Day (25 June), but one dog is always welcome back at Unitywater any time. Unitywater recently called in English springer spaniel Danny the water leak detection dog and handler Ryan Lawrie, of Bellden Environmental Services to help find a problem leak. With a fast-flowing creek and extensive, rough terrain to navigate, the network engineering team were open to an innovative way to detect an underground leak.

Unitywater Executive Manager Customer Delivery Rhett Duncan said the utility was committed to delivering high quality, safe and reliable water services to the community and to help save our most precious resource. "We use a combination of automated remote monitoring to detect leaks, as well as on ground crews inspecting valves and testing water pressure to maintain our network and minimise leaks that can cause disruptions," Mr Duncan said. "But this case presented unique circumstances and highlights that we will do everything we can to provide a continuous supply of water to our customers."

Using methods including acoustic loggers, the Unitywater Network Engineering Team had narrowed the search to a 1.9km section of hilly terrain outside of Maleny. Danny, one of only about four water leak detection dogs in Australia, and less than 10 worldwide, is trained to sniff out chlorine in treated water.

Mr Duncan said Danny found where the main leak was presenting on the surface, which was about 100 metres from the leak in the pipe. "He was spot on in that regard," Mr Duncan said. "Usually leaks will rise to the surface, however, in the instance of the main leak we were looking for, the leaking water was presenting a fair way from the actual trunk water main."

Although trudging up and down a Maleny hillside seems like a lot of work, for Danny it was all fun and games. "At the end of the day the only reward that he wants is a ball, so all of this is just for a ball, it's all just fun for him," Mr Lawrie said.

Bellden has two English springer spaniels that use chlorine and fluoride as their target scents. "With any sort of treated water in any urban area, it's going to have some level of chlorine and fluoride in it," Mr Lawrie said. "He'll be able to discern the chlorine and fluoride from rainwater and tank water just because it's a very distinct smell for him. He breaks it down on a molecular level."

2021 PASS Award Winner

TasWater Small Plant and Equipment Officer Craig Woodhouse has won this year's Problem Accepted Solution Supplied (PASS) award. The award provides an opportunity for operational staff to share their innovations and solutions with others in the water industry.

The North West based Small Plant and Equipment Officer took out the award for his water jetting foot valve operation. "It is a great honour to receive recognition for my foot peddle technology I developed for water jetters," Mr Woodhouse said.

Water jetters are powerful, high pressure machines which clean out blockages within TasWater's sewerage network. The new peddle mechanism has eliminated the need for two people to use the machines, and it has also helped bring them up to current Australian standards.

In the past there had been communication issues when operating the water jetters, communication was sometimes difficult when both colleagues are not in the same line of sight as each other.

Miscommunication can increase the likelihood of an accident and possibly a severe injury. The new operation involves a radio-controlled foot valve that, through a receiver and control box, supplies power to activate a high flow, high pressure valve to supply high pressure water.

Stop Valve

Foot peddle.

When assessing the situation, Craig realised the communication issues could be eliminated if the operator, at the point of jetting, could have full control of the machine. With the new foot peddle, the operator is able to turn the water from the jetter on and off and if they fall or lift their foot, the machine shuts the water down.

There are more than 15 jetter units within TasWater and to replace them all with an Australian standard compliant machine would cost nearly $1.5 million.

The solution I developed is a lot more cost effective, the valves are made in America but can be fitted to all existing jetter units by Tasmanian contractors.

The new foot valve operation equipment will soon be installed to water jetters across the state, leading to improved health and safety outcomes for staff as well as ensuring blockages in our systems can be cleared out efficiently and effectively, benefiting our customers and the environment.

wioa.org.au/awards/national-awards/pass-award/

Foot Pedal Control Box.

Remote E-Stop Box.

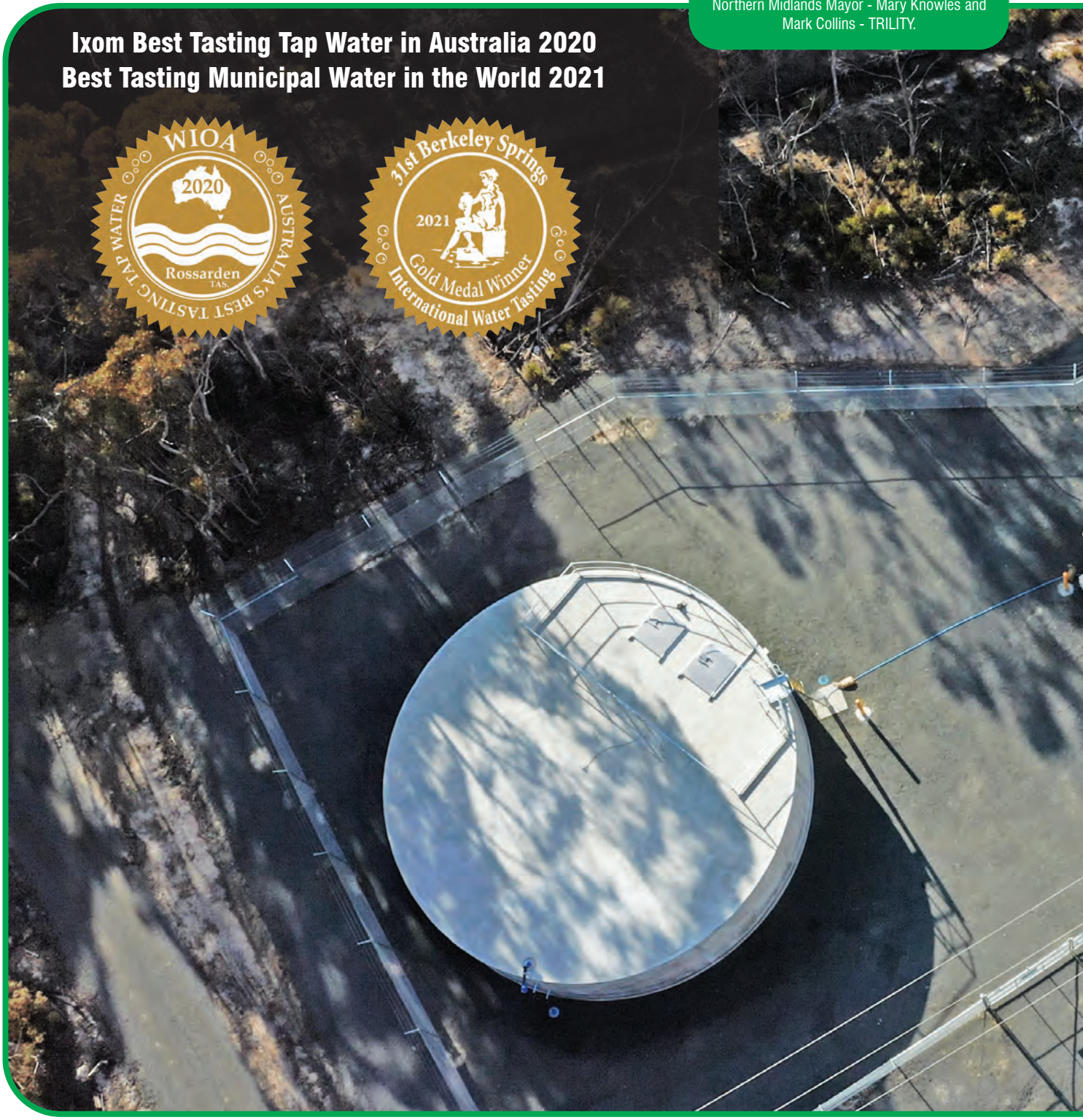
Craig on-site with the award winning foot peddle technology for water jetters.

BIRDS EYE VIEW
Facilities Members Operate
Rossarden Water Treatment Plant, Tasmania

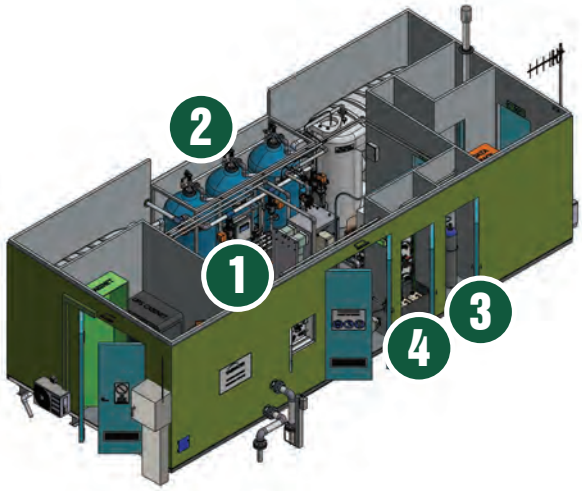
Rossarden was part of TasWater's 24glasses - Regional Towns Water Supply Program. The program was implemented to remove all long-standing Public Heath Notices in regional towns across Tasmania. In just three years the town has gone from water you could not drink, to the best drinking water in the world. This global recognition reinforces that the standard of treatment processes implemented at Rossarden is truly world class.

Juliet Mercer - TasWater, Minister Guy Barnett, Northern Midlands Mayor - Mary Knowles and Mark Collins - TRILITY.

Ixom Best Tasting Tap Water in Australia 2020
Best Tasting Municipal Water in the World 2021



The Rossarden WTP is gravity fed raw water from Aberfoyle Creek and uses a predominantly membrane process. It has the capacity to treat up to 49kL/d with 270kL of clear water storage.



1 Ultrafiltration

2 Granular Activated Carbon Contactor

3 Carbon Dioxide Dosing

4 Sodium Hypochlorite Dosing

Proposed Changes to the Operator Certification Framework

The national Drinking Water Operator Certification Framework was originally developed in 2012, and Certification was the adopted name as it most accurately reflected the need of the water industry at the time.

Since then, there has been growing confusion over the use of the term Certification. Many individuals hold a Certificate II or III, but that doesn't mean they are, or can be, "Certified" under the Framework. Certification actually requires operators to have all the units of competency relevant to the specific treatment processes they operate, and a commitment to an ongoing skills development program.

from Certification to Registration

Following a Certification Taskforce meeting in July, draft amendments have been made to the Framework to reflect proposed name changes:

- Water Industry Operator Registration Framework 2021
- Water Industry Operator Registration Taskforce (WIORT)
- Registering Body in lieu of Certifying Body
- Registered Professional Operator to replace Certified Operator.

Operators "Certified" under former Frameworks will be automatically recognised as "Registered Professional Operators" under the conditions of this Framework, provided the conditions of previous Framework versions, including timeframes, remain met.

The only other amendments include revised listings of units of competency to reflect updates to the National Water Training Package (NWP). If you have any feedback you'd like to provide please submit to them to Dave Cameron from ***qldwater*** by 5 pm 20 August 2021.

dcameron@qldwater.com.au

wioa.org.au/certification/

New Re-Usable Waste Technology for Farmers

South East Water is involved in a new wastewater management project to transform leftover biosolids headed for landfill into reusable products for farmers.

Developed by RMIT University and the first of its kind in Australia, the innovative technology uses a process called pyrolysis, whereby high temperatures destroy pathogens and microplastics in biosolids to create biochar - a carbon-rich form of charcoal for use by farmers and the wider agriculture industry to improve soil health.

Currently around 30 per cent of the world's biosolids resource is stockpiled or sent to landfill, creating an environmental challenge.

The Biosolids to Biochar project is a circular approach to wastewater management, with the new technology having the potential to eliminate landfill waste across the water industry.

South East Water is helping to deliver the Biosolids to Biochar project in partnership with RMIT University, Intelligent Water Networks and Greater Western Water, with the technology currently in trial at the Melton Recycled Water Plant in Melbourne.

South East Water supports these kinds of innovative emerging technologies as an important part of their commitment towards reduced emissions and a circular economy approach towards wastewater.

The disposal of biosolids is a challenge across the water industry. South East Water is continually looking for ways to work with others to create innovative solutions to protect our environment and to help our customers and community. This technology is important as it can be scaled to any size, making it a possible solution for both urban and regional water utilities.

Dean Barnett from the IWN is excited to be part of this innovative technology trial, turning a waste product into a useable resource, which meets our objective of a circular economy for our members and the broader water industry.

The next stage of the trial will involve scaling up the technology, with a dedicated unit in place at a Water Recycling Plant (WRP) over a longer period of time.

Contributed by Dean Barnett from IWN.

Melton RWP Biochar.

Help the Water Industry on Census Night

AUGUST 10

Census night will be Tuesday 10th August 2021, and we need all people employed in the water industry to use one of the 28 occupations that were established by the Australian Water Occupations Framework (AWOF) back in 2013-14. Currently the water industry is significantly under counted due to the lack of water specific occupational codes recognised by the Australian Bureau of Statistics (ABS).

The Australian and New Zealand Standard Classification of Occupations (ANZSCO), is a classification system that provides for the standardised collection, analysis, and dissemination of occupation data. The current data for the urban water industry that has been captured through previous Census' does not reflect the true size or importance of the water industry. Employment in the water industry is significantly under counted due to the lack of recognition of water specific occupational codes. The current numbers indicate there are only around 500 operators in the water industry but we know that there are many more across the country.

Why are ANZSCO codes important?

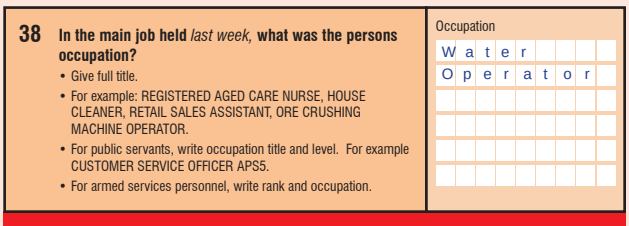
- To define the size & scope of the water industry
- Government funding opportunities
- Training & workforce development needs
- Statistical analysis (ABS)
- Licensing & certification

It is critical that sufficient industry occupational data is collected through the census, to identify urban water industry occupations. Recognition of these occupations will promote professionalism and provide more robust outcomes for public health and the environment.

Getting the water industry better represented in the ANZSCO codes is not easy to achieve as they are reviewed infrequently and there needs to be evidence of a significant number of employees in an occupation for a separate code to be created.

If an occupation like Production Officer or Maintenance Worker is reported in the census, the occupation is coded to a generic occupation code unrelated to the water industry.

It is recognised that many organisations have slightly different names for occupations that fundamentally perform the same roles.


38 **In the main job held** *last week,* **what was the persons occupation?**
- Give full title.
- For example: REGISTERED AGED CARE NURSE, HOUSE CLEANER, RETAIL SALES ASSISTANT, ORE CRUSHING MACHINE OPERATOR.
- For public servants, write occupation title and level. For example CUSTOMER SERVICE OFFICER APS5.
- For armed services personnel, write rank and occupation.

Occupation: Water Operator

Example of census question 38 from 2016.

On Census Night

It is important for the industry that on census night, the generic occupation descriptor from the AWOF Occupations list is used instead of the name used by the employer.

By encouraging all water industry workers to use the generic occupations, this will improve the possibilities for all of the water occupations to be better represented to government and provides the ABS the opportunity to revise the ANZSCO codes for the benefit of the whole water industry.

28 Occupations Identified in the AWOF

Source (catchment & bulkwater)
- Bore Fields Operator
- Bulkwater Operator
- Catchment Operator (Compliance & Enforcement)
- Catchment Operator (Land Management)
- Catchment Operator (Technical)
- Dams Operator
- River Operator
- Supervisor
- Diversions Officer
- Dam Safety Instrumentation Specialist
- Salinity Interception Officer

Networks
- Assistant Networks Operator
- Networks Operator
- Networks Supervisor
- Work Planner

Treatment (water, wastewater & recycled)
- Assistant Operator
- Water Operator
- Water Treatment Supervisor
- Water Treatment Coordinator
- Water Treatment Technologist

Hydrography
- Assistant Hydrographer
- Hydrographer
- Senior Hydrographer

Trade Waste
- Trade Waste Officer
- Trade Waste Supervisor

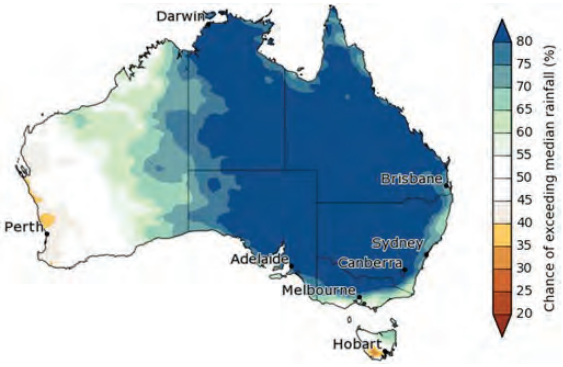
Irrigation
- Field Operator

Other
- Essential Services Operator

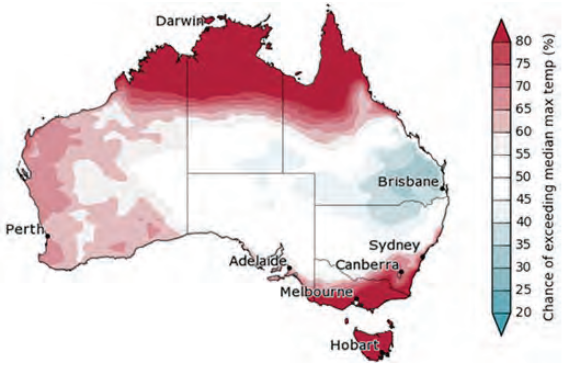
BOM - Climate Overview

Climate Outlook

The Bureau of Meteorology advises that in the August to October period, rainfall is likely to be above average for most of Australia. Large parts of the eastern Indian Ocean are warmer than average. A negative Indian Ocean Dipole event is looking increasingly likely. This can favour above average winter-spring rainfall for parts of Australia. The El Nino-Southern Oscillation index is currently neutral.



Maximum temperatures for August to October are likely to be above median for the northern tropics, and western and south-eastern parts of Australia. For south-east Queensland extending into north-east NSW, below median daytime temperatures are more likely. Above median minimum temperatures for August to October are likely Australia-wide.



Climate influences

Australia's temperature and rainfall variability are also influenced by global warming caused by human activities. Australia's climate has warmed by around 1.44 °C for the 1910–2019 period, while southern Australia has seen a reduction of 10–20% in cool season (April–October) rainfall in recent decades.

The Bureau's climate model uses the physics of our atmosphere, oceans, ice, and land surface combined with millions of observations from satellites and on land and sea. As a result, it incorporates the influence of climate change and natural climate drivers like ENSO, IOD, the MJO, and SAM in its outlooks.

BOM YouTube Channel *tinyurl.com/562pz9fy*

bom.gov.au

Membranes Did you know?

Readers of the recently released WIOA Practical Guide to the Operation and Optimisation of Microfiltration and Ultrafiltration Membrane Processes may be interested to learn that the first commercial reverse osmosis desalination plants were developed by DuPont in the late 1970's/early 1980's using their patented hollow-fibre B9 and B10 Permasep Permeator technologies.

I was involved in the design of many such desalination plants whilst I worked for Paterson Candy International in the UK during this time, who were a licensee. The majority of these plants were delivered to Saudi Arabia and the Gulf States. These plants were relatively small by today's standards and the flux achieved was quite low.

The real breakthrough in RO desalination came with the development of the spiral-wound thin-film composite membranes by FilmTec and Hydronautics in the late 1980's.

And in a rather strange quirk of fate, DuPont now owns FilmTec! Cheers and congrats on a great guide!

Contributed by Peter Gebbie.

Look-a-Like

We couldn't help but notice that Ann from the WIOA Administration team bears a remarkable resemblance to Chanel 7's Sunrise host Natalie Barr.

Ann Austin.

Natalie Barr.

First Drought, Now a Mouse Plague

Rural Aid Australia has recently delivered vital hay to Narromine farmers fighting the mouse plague. Two road trains carrying 144 bales of hay arrived in Narromine, NSW in the last week of June, delivering relief to many farmers.

Due to the mouse plague, farmers have had entire sheds of hay reduced to unusable piles of toxic straw. Their grain has been eaten from the ground that it was planted in, and their homes are overrun with the rodents.

"I've already burnt hundreds of bales so far," said Scott Richardson, a local farmer. "The mice have destroyed it. We've just come out of drought and we try to be self-sufficient. This hay drop will go a long way to helping with that."

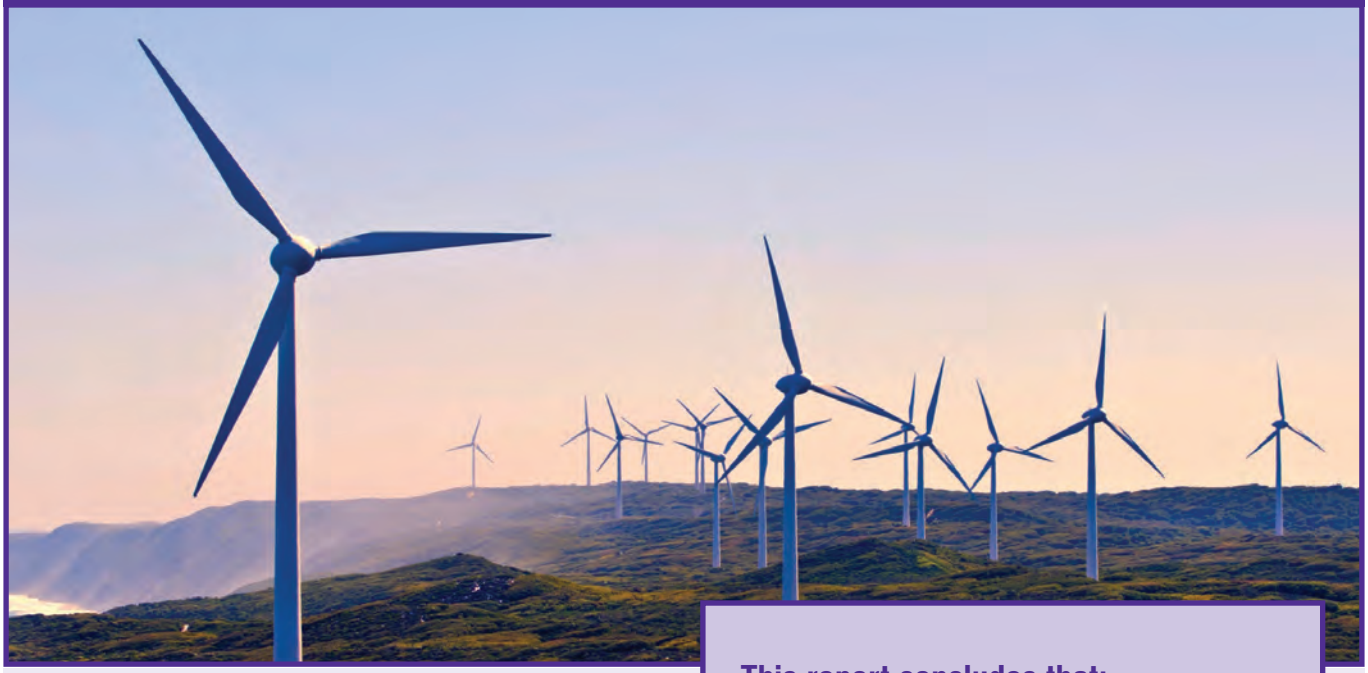
Narromine hay drop.

Rural Aid has pledged a $1 million fund to assist mouse plague affected farmers across the country. Hundreds of farmers from across Australia have since applied for the assistance.

You can help us assist these farmers by donating now to Rural Aid's mouse plague relief fund.

tinyurl.com/cj9jayur

Renewables Still Cheapest New-Build Power in Australia



The CSIRO reports that solar photovoltaics (PV) and wind continue to be the cheapest sources of new electricity generation capacity in Australia, even when the integration costs of renewables are included, according to the final 2020-21 GenCost Report.

Each year, CSIRO and the Australian Energy Market Operator (AEMO) consult with industry stakeholders to estimate the cost to generate electricity for new power plants in Australia through their GenCost report.

This year's report used a new, more accurate approach for analysing the cost of renewables like solar and wind, to include additional 'integration' costs such as storage and new transmission infrastructure, and still found solar and wind continue to be the cheapest sources of new-build electricity generation.

CSIRO Chief Energy Economist Paul Graham said an early draft of the report, released to stakeholders in December 2020, had been improved to reflect feedback about the impact of weather variability on driving up these integration costs.

"The final report addresses this feedback: our analysis of renewable integration costs now includes greater recognition of this year to year weather variability and the impact it has on electricity demand and supply," Mr Graham said.

"We took the integration costs from the highest of nine historical weather years."

Stakeholders asked that the analysis recognise batteries are achieving longer lives before they need to be replaced and costing less, meaning the costs of storage from batteries is lower than previously thought.

This report concludes that:

- Solar and wind continue to be the cheapest sources of new-build electricity.
- Battery costs fell the most in 2020-21 compared to any other generation or storage technology and are projected to continue to fall. Lower battery storage costs underpin the long-term competitiveness of renewables.
- Pumped hydro is also important and is more competitive when longer durations of storage (above eight hours) are required.
- The new approach is a model of the electricity system that optimises the amount of storage needed, and also includes additional transmission expenditure.
- Previous reports added arbitrary amounts of storage costs and did not include transmission or other costs.

This report includes hydrogen electrolysers for the first time and finds that hydrogen is following a similar trajectory to more established renewables.

With increased interest in global deployment, and many demonstration projects worldwide, substantial cost reductions in hydrogen technologies are expected over the next decades.

The full report is available at:

tinyurl.com/s6dbjtvk

Article from CSIRO Snapshot (June 2021).

CSIRO PUBLISHING

From Divers to Robots

Clean faster, clean smarter, eliminate downtime

In 2017, Fremantle Commercial Diving (FCD) set out to find robotic tank and reservoir cleaning systems to replace the need for human entry when cleaning water assets. Their management team travelled to Europe, America and the Middle East to evaluate a series of robots by different manufacturers who all claimed to have already invented robots to undertake this type of work.

Five robots were purchased and trialled, of which all five failed to meet the required testing benchmarks set by FCD and their clients, and all were subsequently abandoned.

FCD commenced an intensive Research and Development (R&D) program in 2019 to design and build the world's first truly viable tank and reservoir cleaning machines. Development challenges were numerous and as the program progressed it was easy to see why the initially purchased off-the-shelf robots failed in both capability and reliability.

Expectations from Australian Industry are very high, and the diversity of water assets encountered proved a difficult challenge. The results of building against this high benchmark have ultimately been worth the effort, with the robots being incredibly successful and receiving multiple awards in Australia and overseas.

The R&D program culminated in the formation of two new divisions within FCD, Dredge Robotics (non-potable) and Watertight Robotics (potable) and the production of a world leading fleet of underwater robots.

Liner-safe robot cleaning a HDPE lined process pond.

To-date, FCD have designed and built 8 different types of robots including liner-safe potable tank cleaning robots, process tank cleaning robots and large liner-safe robots with weed harvesting capability for ponds.

The fleet includes inspection robots to gather detailed footage of potable tanks post-clean to demonstrate condition. Many clients have transitioned to using remotely controlled robots, as they are a safer more efficient alternative and can clean assets while they remain online and in-use.

dredgerobotics.com.au

watertightrobotics.com.au

Contributed by Rosalie Ritchie from FCD.

Potable tank cleaning robot removing sediment while the asset remains online.

A New Aeration Concept for Water and Wastewater Lagoons

The use of wastewater treatment lagoons, or stabilisation ponds, is a common practice for rural municipalities and industrial facilities. Through the years there have been numerous designs for these 'sludge settling basins,' ranging from facultative, partial aerated, and fully aerated systems. But the primary reason for these systems is to utilise relatively shallow earthen ponds, or lagoons, for the purpose of sludge settling and stabilization. Over the years, the technologies for these lagoons have changed little except to line them to protect groundwater from contamination and the addition of multi-celled lagoon systems for the purpose of adding mechanical oxidation for quicker treatment and effluent water polishing.

The other things that have changed are the encroachment of growing populations and plant expansions that often pose problems for both the lagoons and the populations around them. Noxious odours, which are caused by the insufficient digestion and build-up of the sludge on the bottom of aerated lagoons, become a primary problem.

Space limitations become a major problem as populations grow, and new, or larger, cells are required in the lagoon system. The efficiency of these lagoons is dependent on a myriad of conditions that range from environmental to design limitations. Sludge reducing bacteria populations must constantly be assessed, sludge depth and water temperatures are usually in constant flux and aeration equipment and the energy to run them is expensive and causes ever increasing maintenance and maintenance costs. Post the treatment lagoon, in the effluent holding ponds, blue green algae (BGA) is often a problem in warmer areas. The use of a Royce Lagoon Aerator in this pond can de-stratify the lagoon and make it difficult for the BGA to exist.

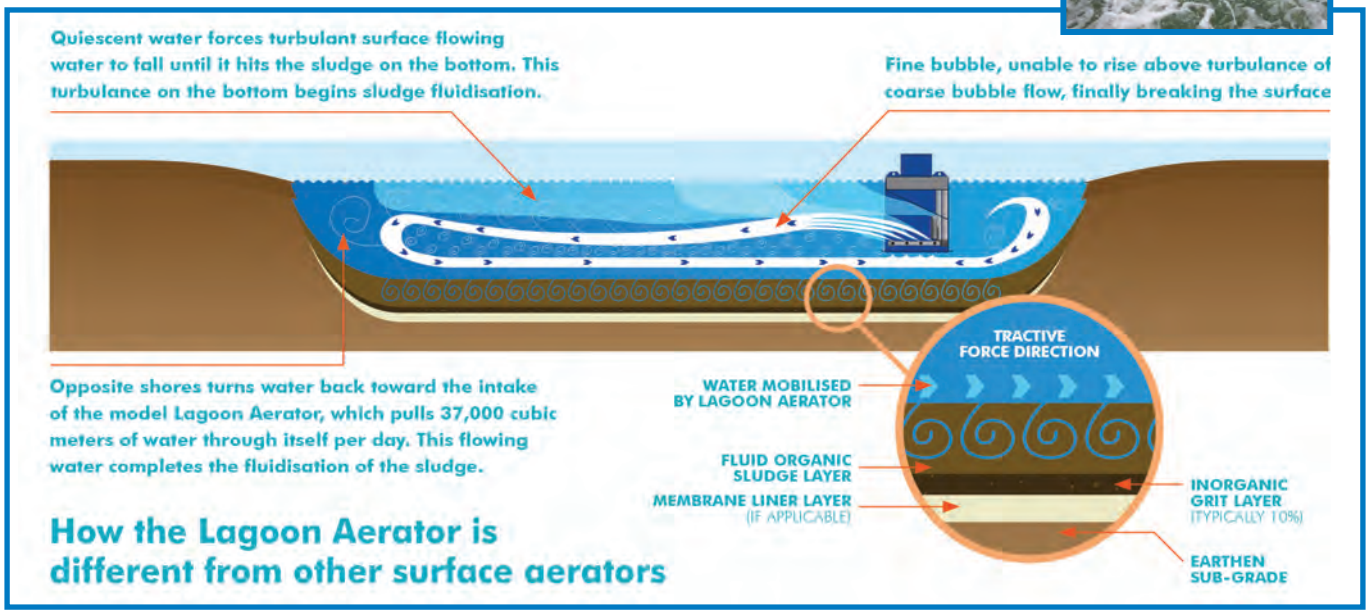
Benefits

- Continuously moves the lagoon or pond water via vertical mixing, for complete destratification, algae bloom reduction, and natural sludge digestion.
- Delivers more dissolved oxygen to the water per hour
- Lowers energy costs by up to 80%.
- Practically maintenance-free for years.
- Eliminates trapped nitrogen and ammonia gases, and improves BOD/COD counts.
- Advantages over other Lagoon Aeration systems.
- Less energy usage on an annual basis - per area covered.
- Over 37,000 cubic meters of water movement in a 24 hour period.
- Guarantees continual water turnover and de-stratification throughout the lagoon - mixes algae and eliminates blue-green algae stratification.
- Moves all the lagoon's sludge in a slow, non-violent manner - allowing for sludge turnover for continual degradation by the indigenous bacteria.
- No annual motor maintenance.
- The only maintenance is to clean or replace two inexpensive filters annually.
- No metal parts to corrode in water.
- No moving parts in water.
- If used in a fish grow-out or recreation lake, the fish in the pond face less stress, more grazing space, more evenly distributed dissolved oxygen, and a constant flow into which to swim.

Contact Royce Water Technologies.

0407 468 568

roycewater.com.au



Pro-V Inline Vortex Flow Meter

VorTek Instruments Pro-V™ M24 Multivariable Vortex Flowmeter offers accurate and reliable flow metering in a multivariable design. The multivariable design incorporates a high-accuracy velocity sensor, a precision platinum RTD temperature sensor, and a solid-state pressure transducer.

The M24 can deliver volumetric flow, mass flow, temperature, pressure, density, and energy (BTU) measurements from a single installed device. This drastically reduces complexity, equipment costs, and installation costs in comparison to installing multiple stand-alone instruments to arrive at the same process measurements.

The M24 includes a reduced bore option. The meter's process connections match the line size but using integrated reducing flanges, the meter body is reduced in diameter. This increases the fluid velocity through the meter. Increasing the velocity in this fashion extends the meter's measuring range to capture lower flow rates that might otherwise be missed in a full line size meter.

This reduced bore option also shares the same face-to-face dimension as a standard M24 meter for pressure classes up to ANSI 600. So, if process conditions change, the meter body size can be changed without any costly piping modifications. This is especially useful in project planning, as it allows for flexibility into the future.

The M24 flowmeter offers an industry-leading variety of communication and power options. In addition to providing traditional communication methods such as analog output signals, the flowmeter also offers the latest and most advanced serial communication options such as BACnet®/IP and Modbus® TCP/IP. The M24 is the only vortex flowmeter on the market to provide Power over Ethernet (PoE) capabilities. Power over Ethernet functionality delivers power and data through a single ethernet cable. Both simplifying installation and reducing installation costs.

Contact AMS Instrumentation & Calibration.

03 9017 8225
sales@ams-ic.com.au
ams-ic.com.au

Pro-V™ M24 Multivariable Vortex Flowmeter.

Protecting Cairns Critical Potable Water Supply

Screening up to 120 million litres of river water each day is the first step in ensuring that a safe and reliable drinking water supply can be provided to the residents of the City of Cairns in tropical North Queensland. With a population of approximately 155,000, maintaining supply is critical for the community and the Cairns Regional Council.

Cairns, internationally renown as the gateway to the Great Barrier Reef one of the seven natural wonders of the world and popular tourist destination, receives the majority of its water from the Copperlode Falls Dam via the Crystal Cascade water Intake and Tunnel Hill Freshwater Creek Water Treatment Plant.

HUBER Escamax® Screen.

Replacing the old intake screen at the Crystal Cascade water inlet, Hydroflux Epco recently supplied a giant HUBER Escamax® Screen that was retro-fitted into the weir of the Crystal Cascades water intake.

Standing 5 metres tall and 1.4 metres wide the screen uses high efficiency 6mm 316 stainless steel perforated panels to filter the raw water of debris including leaves and twigs and can process over 1200 litres per second. This flow is enough to fill an average backyard swimming pool in under a minute.

Contact Hydroflux Epco.

02 9089 8833
enquiry@hydrofluxepco.com.au

New Members

Welcome to the following people and companies who have recently joined our Association as a Member or Corporate Supporter.

New Individual Members

David Rayner, Paul Hone, Rachael Vennix, Emily Lohmann, Rodney Dedman, Paul Florian, Corey Hester, Anthony Shackleton, Angus Bowles, Tabatha James, Graeme Mellor, Simon Rooney, Chris Johnstone, Benjamin Greenwood, Leanne Christensen, Ash McGrath, Cedric Lo, Johnson Kuy, Simone Goodwin, Ben Haddock, Brett Rosser and Nicholas Rosser.

New Corporate Members

Spilltek International, EVM Australia, Trainright, Huesker Australia, Trop Water, Leading Edge Innovations, Regional Asset Management, mIoT, Hunter ECO Plumbing, Process Pumps and Concept Environmental Services.

WIOA Coming Events

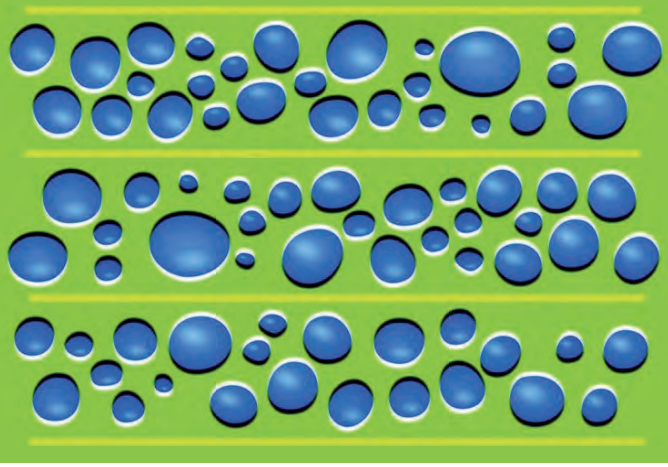
19 August	WIOA Talks - UV Disinfection
10 September	Team of the Year Applications close
22 September	WIOA Talks Webinar - Extreme Events

WIOA Conference & Exhibitions in 2021

We are monitoring the COVID-19 situation and Health Department advice across Australia, hoping to be able to conduct face-to-face Conferences.

27 & 28 October	14th NSW Conference & Exhibition, Tamworth
24 & 25 November	83rd Victorian Conference & Exhibition, Bendigo

Seeing is Believing



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