

# OPERATOR

May 2018 Edition



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Winners are Grinners  
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Rod Wellings at the  
Qld Charity Bowls Day.  
Read about this day on  
page 15.



Camille O'Meara from  
Stornoway presenting in  
Hobart. More on page 17.

Newsletter of the WATER INDUSTRY OPERATORS ASSOCIATION OF AUSTRALIA

## FROM THE MD'S DESK

Welcome to the May edition of Operator and another jam-packed update on WIOA's activities.

Our Annual General Meeting and Weekend Seminar were held in Ballarat on the first weekend in March with both Adrian Rijnbeek and Heidi Josipovic re-elected as President and Vice President respectively. We also welcomed Mark Abela and Glenn Alford onto the Committee for the first time. Our thanks were extended to outgoing Committee members in Darren Lord from Tasmania and Stephen Wilson from the Water Industry Training Consultants. A small gift on behalf of the members was presented to Stephen for his outstanding service to the Association over 23 consecutive years on the Committee.

The Weekend Seminar itself was another great success with the assembled members treated to some informative technical and product presentations, along with some "golden" themed competitions. A report covering all the goings on appears later in this edition.

In early April, we staged our NSW conference in Tamworth. We were excited that representatives from more than 40, or almost half of the NSW Councils joined us over the two days. There were some excellent platform and poster papers presented and the exhibitors made an enormous effort to showcase their products and services. Our thanks are again extended to our excellent Host and major sponsor in Tamworth Regional Council, along with all our other sponsors, the exhibitors, delegates and visitors. The award winners announced at the NSW conference also deserve our heartfelt congratulations, including Port Macquarie Hastings Council for winning the NSW/ACT Water Taste Test.

We now head off to Logan for the Queensland conference in the first week of June. All 112 exhibition sites were sold out in around 35 minutes, demonstrating yet again how valuable the companies rate the opportunity for interaction with the water industry operational staff. The technical program includes a diverse line up of presenters covering a wide range of topics including input from a number of Queensland Councils. We look forward to the fun and excitement of the mains tapping competition, and wonder if anyone will be able to knock off the Gold Coast "Tapping Tubbies" team who have won the last 2 events. Delegate and visitor registrations are still being accepted with registration forms available from the website.

Another new initiative is the South Australian Operations Conference and Expo, which is being held in Murray Bridge on 1 & 2 August 2018. Although it is a significantly smaller event, and is being run under a different format to our East Coast conferences, we are confident that it will deliver some great benefits to everyone that attends. More information on the event will be provided in the coming months.

I had the pleasure of chaperoning the WIOA Operators Tour to New Zealand in early May. The largest ever contingent of 17 Aussies converged on Wellington and enjoyed a fabulous tour of water, wastewater and network facilities in the southern region of the North Island. There was a mixture of old crusties and new up and coming operators on the tour, who all got

along famously and learned heaps from one another.

We also participated in the Water Industry Operations Group (WIOG) "Meeting Challenges" conference in Palmerston North. Once again, the WIOG team did a fantastic job not only in organising and hosting the tour, but by running such a successful conference with 100% volunteer staff.

It is worth mentioning and congratulating the Australian Tapping Competition Team of Mae Jobson and Stephanie Badger who put themselves out of their comfort zone and had a go at a live tapping at the conference. Despite neither of them ever working in the networks area, and in front of a sizable crowd, they did a remarkable job in the competition and belted the pants off the Kiwi team from Wellington. Look out for a full report on the tour from some of the attendees in a future edition of Operator.

Under Kathy's expert tutelage, we have been assisting two University of Melbourne students to undertake their final year project. They have been reviewing the range of products and services WIOA offers and have been investigating other opportunities for us to consider delivering in the future. They have undertaken numerous personal interviews and produced a survey that around 400 WIOA Members completed. We look forward to their final reports, but more importantly, we anticipate that the project will provide a blue print for us to be able to follow, allowing us to offer even more to our members in due course.

There is a building level of interest in Operator Certification. WIOA staff have worked with numerous organisations recently to develop a matrix which allows them to match the operator training required to the various treatment plant processes used at a plant. There is a substantial amount of training already underway in several States with the intention of having the operators certified once their gap training is completed. Anyone looking for more information on certification can visit the WIOA website or contact us at the WIOA office.

At a meeting of the Chairs of all the State based WIOA Advisory Committees, it was agreed that a revamp of the Advisory Committee structure and membership is required. The number of positions on each Advisory will be limited to 11 and the opportunity to nominate for a position will be provided to all Members in each respective State. More details on the process and the expectations of members on each Advisory Committee will be shared with Members soon.

In the meantime, the WIOA events calendar is rapidly filling courtesy of some great work and assistance by all our State based Advisory Committees. Apart from our now four conferences, there are a variety of interest days and tours either just completed or happening soon, along with some seminars and Water Taste Test events. Although we do understand that not everyone can go to every event, please make sure you support the work of your own members by participating whenever you can.

Until next time,

**George Wall** – WIOA Managing Director

## PROFILE OF A MEMBER



**Name:** Glenn Alford

**Position:** State Sales Manager

**Employer & Location:** Calix - Victoria

**How long have you worked in the water industry and what attracted you to it?**

I've been a supplier to the Water Industry for the past 10 years. Always liked the variety within the industry of different companies, contacts and ever-changing products and services available.

**Thoughts on the water industry at the moment**

Great time to be involved in the water industry. With new products and technologies coming along all the time to improve efficiencies, productivity and operator safety. The industry is in a good place.

**What do you enjoy most about your job?**

Getting out and talking to a range of different contacts and companies across the country. Providing an industry recognised product, but with new technology to improve performances with product expertise and data to support our claims.

**What are the major challenges in your current role?**

Working within a very competitive environment and also supplying products to sewer/wastewater which is a live environment, always presents new challenges.

**How long have you been a WIOA member? (your involvement)**

10 years

**How do you relax?**

I don't, but red wine helps

**Where do you live and what's the best thing about it?**

Rowville Victoria, close friends and community

**Your involvement with WIOA & as a new member on the WIOA committee, what contributions are you hoping to be able to make?**

Hoping to bring some new ideas and energy to an association that is recognised and growing, but with further growth possible. Would love to have WIOA make inroads into South Australia, Western Australia and Tasmania.

**Quick questions**

**Age:** 39

**Nickname:** Plugger

**Family Status:** Married, two children (10 & 7)

**Pets:** Daisy the wonder dog

**Favourite food:** Chicken Parma

**Least favourite food:** Fruit

**Favourite TV show:** Have you Been Paying Attention

**Worst TV show:** My Kitchen Rules

**Favourite Movie:** Hoosiers

**Favourite Musical Artist/s:** U2

**Favourite book:** Devil in the White City

**Favourite team:** The mighty Saints

**Ambition in life:** Work hard and play hard

**Hobbies:** My kids, golf, AFL, NBA

**Best Trait:** Positive attitude

**Worst Trait:** Impatient

**Four people to invite to dinner:** Mohammed Ali, Michael Jordan, Nelson Mandela, My Wife!

## NSW EXHIBITORS SUPPORT LOCAL DISABILITY SERVICES

As the NSW exhibition drew to a close and exhibitors were packing up, WIOA put out a call asking if any companies had any surplus promotional merchandise that we could donate to the local disability services.

A number of generous companies provided a range of goods that WIOA, in conjunction with the Tamworth Regional Council was able to donate to the local Challenge Community Services.

Barry Murphy, CEO of Challenge Community Services, was very grateful for the items that will be used to encourage participation and reward good manners by the services clients. Barry was very excited about the light sabres and told us he intended to take one back into his meeting to keep everyone in line!



Left to right is Tamworth Regional Council Headworks Operators Travis Hutton and Mick Hearn, and Challenge CEO Barry Murphy.



# NODP 2018 COMMENCES

The 2018 Victorian Network Operator Development Program (NODP) kicked off in Melbourne in February with a new group of network operators wanting to further develop their skills and leadership qualities within the water industry.

Session one focussed on leadership and our regulatory obligations as a water business. The first day commenced with a presentation from the EPA's Dan Hunt which aligned our responsibility to the environment in which we operate and the legislative requirements that we as operators are expected to meet.

We then heard from Leanne Wells from the DHHS who outlined our responsibility in supplying safe drinking water to our customers and maintaining disinfection during repairs as well as the other maintenance activities we undertake.

Goulburn Valley Water Managing Director Peter Quinn and East Gippsland Managing Director Bruce Hammond spoke about the relationships between an MD, their board and the Minister's Office, the obligation we have to our regulatory bodies with why we do what we do, our obligations to our customers, and the importance of being actively involved within the community while delivering the best service we can.



*Bruce Hammond and Peter Quinn presenting to the 2018 NODP participants*

The evening brought a few "ice breaking" beverages and a meal. We then sat back down to introduce the group to each other and explore their own expectations of the program and what they each want out of it.

Day two was focussed on leadership. Mike Rankin from Water Training Australia ran the day and gave some very interesting insights into different leadership techniques and how to get the best out of yourself and your team, while understanding differing personalities and expectations of individuals.

The group had also completed some personality profiling prior to commencing the program, to assist with understanding their own goals and aspirations for their chosen career and why and how we tick like we do.



*Leanne Wells from DHHS Victoria presenting*

It was a very interesting session to start the program. The next few sessions will focus on more technical components of the role of the network operator.

The operators will have some assignments to complete along the way and each participant will step out of their comfort zone and complete a presentation to the group.

At the end of the program the Victorian Network Operator of the Year will be announced at the WIOA Conference in Bendigo.

**Contributed by Mick Mahoney, NODP Committee member**



*The 2018 NODP Participants*

## DOODLE

At the recent WIOA Weekend Seminar and AGM, a prize was awarded to the most interesting doodle drawn on the team place mat. The winner representing team Southern Cross was Kristy Elrington from Goulburn Valley Water who came up with this artistic version of the water cycle. It would not be out of place in a coloring book resource for kids.



*WES Doodle Winner*

# CLEAR WATER TANK ROOF REPAIRS

North East Water (Vic) has a regular inspection and cleaning program of all their water storage assets. It was during the cleaning of the Benalla Clear Water tank, that loose nuts and also some complete nut and bolt sets were found lying on the tank floor. This prompted a more detailed under-roof inspection of the tank and serious structural issues were soon identified.

This tank is relatively new, has an aluminum roof framing system and is situated on top of a hill, where prevailing winds are frequent.



*Aerial view of the Benalla Clear Water Storage*

The external edge fixings of the roofing sheets were also missing many screws and these were found to have unwound themselves, rather than simply being broken off. Due to the windy environment present, it was only a matter of time before partially fixed roof sheets blew off and the internal framing suffered a significant structural failure.

It was decided to carry out extensive external and internal re-fixing repairs while the roof was still relatively undamaged. A few days of repairs were judged to be more cost effective than a complete roof replacement.



*Internal view of the roof of the Benalla Clear Water Storage*

Contractors used to working in potable water conditions were selected to carry out the renovations. They operated out of an inflatable boat that is also only used in drinking water environments. They wore breathable, lightweight dry suits for their own comfort and to protect the stored water from any contamination that could easily occur if 'corners were cut' and strict hygiene was not maintained.

It took them two days to work their way around all of the roof framing connection areas and either replace any missing bolts or loosen off the existing ones, apply loctite material to the nuts and

re-tighten them again. Appropriate battery powered tools were used as they are completely water proof and have long operating cycles.

Once the internal repairs were completed, it was time to tackle the missing roof screws around the edges. The same operators were deployed as they were also rope access technicians, used to working safely at heights and having all the necessary anchoring and safety equipment to carry out the job effectively.

As well as replacing the missing roof screws using loctite solution and removing/replacing the remaining screws with the same fixing process, it was decided to go one step further and fix the overlap areas of the roof sheets directly into the top of the concrete walls.

Ultra-long concrete fixing plugs were drilled into the tops of the walls and the sheet overlaps were securely fixed, independently of the already renewed screws which were placed into the edge flashings. This process took another two days, but the overall cost of labor and materials was minimal compared with a structural failure and complete or partial roof replacement, and the resulting contamination potentials from having an uncovered clear water storage tank.

**Contributed by Mark Welsh, North East Water & David Barry, Aqualift**

## THE LIGHTER SIDE

Former US President George W Bush had a way with words. Following are examples of some of his verbal highlights.

*'I stand by all the misstatements that I've made.'*

*'The vast majority of our imports come from outside the country.'*

*'If we don't succeed, we run the risk of failure.'*

*'One word sums up probably the responsibility of any Governor, and that one word is 'to be prepared.'*

*'The future will be better tomorrow.'*

*'We're going to have the best educated American people in the world.'*

*'We have a firm commitment to NATO, we are a part of NATO. We have a firm commitment to Europe. We are a part of Europe'*

*'Public speaking is very easy.'*

*'A low voter turnout is an indication of fewer people going to the polls.'*

*'I have opinions of my own --strong opinions-- but I don't always agree with them.'*

*'We are ready for any unforeseen event that may or may not occur.'*

*'For NASA, space is still a high priority.'*

*'Quite frankly, teachers are the only profession that teach our children.'*

*'It isn't pollution that's harming the environment. It's the impurities in our air and water that are doing it.'*



## 2018 NSW CONFERENCE REPORT

The **12th Annual WIOA NSW Water Industry Operations Conference and Exhibition** was staged at the Tamworth Regional Entertainment and Conference Centre (TRECC) on 11 & 12 April 2018. With Tamworth Regional Council acting as event host and major sponsor, more than 600 people from well over 45 NSW and Interstate Councils attended the conference and exhibition.

During the conference Opening session on the Wednesday morning, delegates were officially welcomed to Tamworth and the event by Cr Helen Tickle, the Deputy Mayor of Tamworth. The opening address was presented by Klausch Schmidt from Australian Industry Standards, who spoke about the skills forecast aimed at identifying the industry skills needs in the future and then reflecting this in the management and update of the National Water Package Training Package.

Dr Melita Stevens from Melbourne Water delivered the conference Keynote Address providing a well-received insight into the 2016 water quality incident in Havelock North (New Zealand) and the impact it has had on the industry in New Zealand.

The conference culminated in the Awards Dinner on Thursday evening where David Cashen from Bathurst Regional Council was named the winner of the 2018 NSW Operator of the Year. The team from Port Macquarie Hastings Council were awarded bragging rights for the next 12 months for having the Best Tasting Tap Water in NSW/ACT after winning the Ixom taste test.



*NSW Operator of the Year, David Cashen making his acceptance speech*

## NSW CONFERENCE – WHAT ATTENDEES HAD TO SAY

### DELEGATES

It was an overall great experience that I would encourage any operator or business wanting to expand their skills to invest in. A great variety of topics and subject matter to give something to everyone from ground staff to management. **Ben Hildebrand, Rous County Council**

The technical papers, posters and site visits are good communication tools for enhancing the knowledge and improving the presentation skills of the WIOA members. The rewards make the team motivated. The exhibition is a one stop shop to get in contact with new suppliers and for networking. I really appreciate the WIOA team effort. **Vipuli Narangoda, Nambucca Shire Council**

The conference really opened my eyes to a lot of great services and products that are available throughout Australia. I will be encouraging PowerWater to chase up some of the exhibitors that I met at the conference so we can start using the latest and greatest products in the Water Industry. **Steve Casey, PowerWater**

WIOA's NSW conference and trade display is an excellent opportunity for the water sector to get together to learn about

what is happening "on the ground". The wide variety of speakers and topics presented has something for everyone to learn from. These are presentations of practical activities and initiatives being undertaken in the water sector. The trade display is worthy of a visit just on its own. The extent of the equipment, services and technology on display, backed by knowledgeable exhibitors will allow us to find solutions to many questions and issues. **Murray Thompson, MTWS**

### EXHIBITORS

This was our first time as exhibitors at WIOA NSW and I was very impressed with the event. The visitors were genuinely interested in our products and the venue was ideal. **Jim Fotiniotis, Pump Engineers Australia**

The WIOA Conferences are a great opportunity for us to build relationships with the organisations and the people in those organisations who deal with the issues that we provide - economically and environmentally efficient long-term solutions without Excavation. The opportunity to expose our solutions in lateral lining through WIOA is extremely valuable to the growth of our business. **Brendan Dover, The Drain Man**

# NSW CONFERENCE 2018 WINNERS



## NSW Conference 2018 Winners

Congratulations to all the award winners from the NSW Conference and Exhibition.

### NSW Operator of the Year – sponsored by NSW Water Directorate

**David Cashen** from Bathurst Regional Council

### Actizyme Awards for Best Paper by an Operator

1st **William Constable** - Tamworth Regional Council

2nd **Adrian Cameron** - Tamworth Regional Council

3rd **Barry Young** - Kempsey Shire Council

### Iwaki Pumps Australia for Best Paper Overall

**Thomas Lees** - Ballina Shire Council

### WIOA Award for Best Poster by an Operator

1st **Wes Trotter** - Kempsey Regional Council

### WIOA Conference Charity Presentations

**Manilla Fish Hatchery** \$1,000

**Sailors with Disabilities** \$1,000

### Ron Bergmeier Award Best Exhibition Site sponsored by Utility Magazine

**Fluidquip**

### PASS Award 2018

Hydraulic Gatic Lid Lifter - **Michael Cartmer, Martin Zardins, Quinton Caird, Stephen Casey & Michael Dixon** from Power and Water Corporation

### Ixom 2018 Best Tasting Tap Water in NSW/ACT Winner

**Port Macquarie Hastings Council**

### Ixom 2018 Best Tasting Tap Water in NSW/ACT Finalists

- Walcha Shire Council
- Tamworth Regional Council
- Kempsey Shire Council
- Port Macquarie Hastings Council



*William Constable (R) winner of Best Paper by an Operator with Alex Maderasi from Actizyme*



*Thomas Lees (R) with Les Szanto from Iwaki Pumps after winning Best Paper Overall*



*Wes Trotter (R) winner of Best Operator Poster with George Wall*



*The team from Fluidquip, winners of Best Exhibition Site*



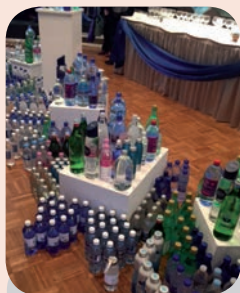
## NSW Conference Images 2018





## TOOWOOMBA TACKLES THE WORLD

After about 30 hours of travel time having left Toowoomba on the morning of 19 February, I arrived in Washington DC on the evening of 19 February in what seemed like the longest day ever.



*Berkeley Springs - Bottled Water display*

Berkeley Springs is about 170 km from Washington DC, so the logistics of travel to the venue arose. To provide Toowoomba with the best chance of success, two sets of samples were sent to the US, one set in plastic and one set in glass. The next morning one set of samples arrived but the second set of samples didn't arrive until the following day.

The temperatures at this time of the year can be around zero degrees Celsius and entrants had been warned about the potential to freeze the samples and thus disqualifying them.

Berkeley Springs is a beautiful town in West Virginia but a little bit off the map with no rail or bus services and I was a bit hesitant in getting a rental car. I found the thought of driving on the wrong side of the road while sitting in the passenger's seat behind the steering wheel a bit daunting.

There is a distinct lack of public transport, taxis and Ubers in Berkeley Springs. But Chemists have solutions and I was able to find an Uber driver that was up for the challenge. Ed the Uber driver was the Knight in Shining armour or the Knight in the Shining Toyota, and came to the rescue transporting the samples to Berkeley Springs.

At the event, one of the speakers took ill so I finished up providing a presentation on the water industry in Australia and the Toowoomba scheme. A case of have presentation will travel.

The Water Taste competition final judging was on Saturday 24 February in 6 categories. The Toowoomba sample was entered in the Municipal Water section but unfortunately didn't win. The winners came from Clearbrook, BC Canada who took out the top gong, not for the first time.

The taste test competition is a hotly contested world championship with entrants from across the globe. The competition is held in good spirit and a fantastic learning experience for all competitors. The hospitality shown by the organisers and venue providers is first rate. As well as the competition, I was able to visit a number of municipal and bottled water facilities and what would be a conference without a visit to a water reclamation facility. Our American counterparts face similar challenges as we do.

As the current Australian title holder, Toowoomba will host the 2018 Ixom Best Tasting Tap Water in Australia competition during National Water Week on Wednesday 17 October 2018.

**Contributed by John Mills** from Toowoomba Regional Council

## DAVE CASHES IN AS OPERATOR OF THE YEAR

Congratulations to David Cashen from Bathurst Regional Council who was named Operator of the Year at the WIOA NSW Conference in Tamworth in April.

Congratulations also to runner up, James Davis of Upper Hunter Shire Council. James was commended for being a dedicated operator under difficult conditions, for his involvement in supervising Chinese technical staff installing membrane water filtration modules – a first for Australia.

David has been a supervisor at the Bathurst Filtration Plant for a decade and has been with the council for 20 years. He is a fully trained Water Filtration Plant operator and motor mechanic who 'lives and breathes' water filtration. Dave is enthusiastically committed to providing the best water supply to the residents of Bathurst.

He has demonstrated his commitment through the co-ordination of multimillion dollar upgrades of ageing infrastructure, providing in depth tours to those interested in water supply; from school groups, to interested residents and to fellow water operators, and finding new and innovative improvements to make the water system better.

David is genuinely passionate about emerging processes and the development of our profession, in particular those new to the industry.



*NSW  
Operator  
of the Year  
David  
Cashen, (L)  
with Gary  
Mitchell from  
NSW Water  
Directorate*

As Operator of the Year, David will be sponsored for a trip to New Zealand to attend WIOA's annual tour of NZ water facilities as well as attending the WIOG NZ conference in Palmerston North. The NSW Water Directorate has been pleased to sponsor the award for the past 12 years, to raise awareness of the unsung work done by Operators across New South Wales.



*Water Master  
Arthur Von  
Wiesenberger and  
John Mills*



## PORT MACQUARIE HAS NSW/ACT TOP DROP

Port Macquarie Hastings Council was announced as the winner of the Ixom 2018 Best Tasting Tap Water in NSW/ACT at the WIOA NSW Conference in Tamworth, for their sample taken from the Hastings River. After being a finalist last year, Port Macquarie Hastings Council was named the 2018 winner ahead of the other finalists Kempsey Shire Council, Walcha Council and the local hope Tamworth Regional Council.



*Port Macquarie Hastings Council team with Teresa Travaglia from Ixom*

Using a blind taste test approach, the samples were judged on colour, clarity, odour and taste.



*The serious business of being a taste test judge - the all female judging panel put their taste buds to the test*



*Tamworth Queen of Country Music, Alexandra Kellahan was part of the judging panel*

This year a local guest judge was included for the grand final with the Tamworth Queen of Country Music, Alexandra Kellahan joining the judging panel. Conference attendees enjoyed local golden guitar winner, singer Jodie Crosby who also performed at the grand final.

The competition is a fun way of allowing WIOA and the industry to raise awareness of the hard work that our operational staff do behind the scenes to ensure a quality drinking water supply is continually available to communities all around Australia.

The Port Macquarie sample will now go on to represent NSW in the Ixom Water of Origin Taste Test against the Livingstone Shire Council, winners of the **qldwater** Best of the Best Water Taste Test. The water of Origin competition will take part at the WIOA Queensland Conference in Logan in June.

Queensland currently leads the Water of Origin 4-1, but confidence levels are high that maybe NSW can get over the line this year.

## WIOA LOOK-ALIKES

It is not often you take a photo of the same person for two completely different look-a-likes on the same evening. Well we think Anthony Evans from Wannon Water created a couple of creative look-alikes by coloring his hair during the weekend seminar. Why? We didn't ask, better left alone!



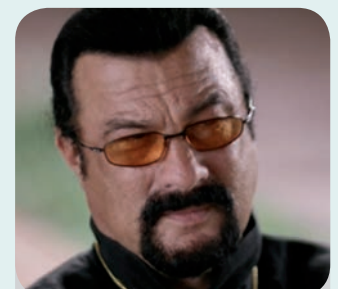
*Anthony Evans  
From Wannon Water*



*Guy Fieri  
from A Minute to Win It*



*Anthony Evans  
From Wannon Water*



*Steven Segal*

If you know of a WIOA member who has a look-alike send us a photo.

## CONFERENCING IN MURRAY BRIDGE

WIOA will be conducting our first Conference and Expo in South Australia at the Murray Bridge Racing Club on Wednesday 1 August to Thursday 2 August 2018.

The event will be different to the traditional WIOA conferences held in the eastern states and fundamentally it is a one-day conference and expo being held over 2 days. It will start at 12noon on the Wednesday and will conclude at 1pm on the Thursday.

A dinner on the Wednesday evening will be held off-site at the Murray Bridge Community Club and will provide a great opportunity for attendees to network and socialise in a relaxed environment.

The Expo will include table top displays from 33 of the leading water industry product and service suppliers who will showcase their wares to the assembled delegates and visitors. The expo will provide a great opportunity for South Australian based operational staff to see and discuss the latest advances in technical equipment and systems

The members of the WIOA South Australian Advisory Committee are currently finalising the conference technical program which will include two invited Keynote presenters, one on each day. The papers program will highlight technological developments, new initiatives and operational improvements undertaken by operations staff in South Australia. This will allow attendees to update their knowledge and skills, as well as network with other operations staff and leading figures in the SA water industry.



Murray Bridge Race Club will be the venue for the inaugural SA Conference and Expo



Bridge to Opportunity

The Rural City of  
**MURRAY  
BRIDGE**

## QLD WATER INDUSTRY SKILLS FORUM

The inaugural Queensland Water Industry Skills Forum was hosted by **qldwater** on 28 February 2018. It was a productive day with 54 participants from 19 organisations including 40 representatives from Qld Water Skills Partnership Members. The forum included presentations from industry experts about critical workforce and skills issues and opportunities for participants to discuss possible solutions.

George and Kathy both attended the Skills Forum. George made presentations to operators who had met the requirements to be certified under the National Certification Framework for Operators within Drinking Water Treatment Systems, and Wastewater and Recycled Water Treatment Systems. Kathy gave a presentation on the growing concern over the skills needs of contractors associated with outsourcing of operations in Queensland, and potential risks to public health outcomes.

During the forum, discussions covered critical issues for the industry including recruitment and retention of staff, along with an ageing workforce. Participants discussed options for secondment, worker exchanges and traineeships to fill skills gaps and the Water Skills Partnership Group will consider how best to progress those.

Certification is still a high priority and work is continuing on development of a Networks Certification Framework and a framework for dam and catchments operators will be considered at a later stage. Participants identified that it can be difficult to demonstrate the value of ongoing training for operators and are keen to hear more about how best to measure and communicate return on training investment.

Following the success of this first event, the forum will be held annually. To find out more about the Water Skills Partnership please contact Carlie Sargent at **qldwater**.



George Wall presenting the credentials to one of the certified operators



## MORE THAN JUST GOLD IN BALLARAT

There was a lot happening in Ballarat on the weekend of 3 March this year. The Australian Rally Championships, the State Rowing Championship and the Western Bulldogs were taking on Hawthorn in the JLT series. The annual WIOA AGM and Weekend Seminar was also underway at the Bell Tower Motor Inn.

With the wonders of modern technology, President Adrian Rijnbeek was able to address the meeting from beside the pool at his holiday resort and with the help of Vice President Heidi Josipovic and Secretary George Wall, the AGM was conducted without any issues at all.



*The AGM in full swing*

On completion of the AGM, our first seminar speaker was Mark Samblebe from MBS Water. Mark spoke about some of the discoveries he has made in his work in remote areas and communities in outback Australia. It was amazing to see the true value of water in these regions, the local responses to treatment and supply of potable water and how they think it should be done. The difficulties that arise when you need something in a hurry, along with the added challenges to keep projects on track were a real eye opener.

Sam Hawkins and Warren Cuts from Smartstream Technology were next up introducing us to their range of innovative wastewater and sewer products with the unforgettable and aptly named "Poo Pit" the major attraction. The range of lightweight manholes, pits, covers and sewer pipes were all on display as well as a range of equipment for clearing blockages and carrying out inspections to maintain your system at its optimum operating level.



*Weekend Seminar attendees and the Poo Pit*

Using ultrasound to control blue green algae in lakes and reservoirs was the theme for Paul Harries presentation. Paul presented us with some case studies undertaken utilising the Envirosonic Algae Control Systems in Victoria and New Zealand. Paul also had a very effective matting used to stabilise stream banks, garden beds and cuttings in roads.

Next up, Kristy Elrington from Goulburn Valley Water discussed her studies and the continuing effort to educate their customers on what we should not flush down the toilet. Kristy was the winner of the IWA Laurie Gleeson Award and has been overseas to look at how some of the major cities control and educate what people flush away and the flow on effect it has not only to the sewer systems but the cost of removing contaminants. The interesting thing for me was the "middle" age group that thought it was OK to flush anything they could down the toilet, a good sign that we need to start educating people early in their lives.

A discussion on community and industry engagement and the role WIOA should take in the forum concluded the day.

Pre-dinner drinks outside amongst the "Poo Pit" and pipes was an interesting affair with some slightly strange goings on, we were later to find out, if you hadn't already worked out, being undertaken by the first timers at the AGM.

After the meal it was time for the entertainment to begin and once again no expense was spared to make sure everyone had an unforgettable night. The teams that were formed early in the day had to rise to the challenge and complete a task with "A minute to win it", hosted by none other than Guy Fieri direct from filming a segment in the USA.



*Peter and Yuan working well as a team in the Ready Spaghetti challenge*

Everyone was up to the challenge and some very innovative ideas were adopted to complete the challenges with team Southern Cross running out the winners for the evening.

*Sam and Kristy celebrate victory in a minute to win it with Guy Fieri in the background*



The TFSOBMSMQ was again the talking point on Sunday morning and the final challenge undertaken by the teams before the technical session started.

Kriston Nilsson from Veolia ran us through the operation of the Ballarat North WWTP and Class A recycling facility. The plant has been operated for CHW by Veolia since 2008 and is capable of treating 8.4 ML/d of wastewater. The presentation was a perfect Segway to the on-site plant visit for delegates attending the tour before heading home.

The AGM and Seminar was again a great weekend of learning, networking and a lot of fun was had by all in attendance. Remember, the water industry is a great place to work so do your best to get the most out of it.

Contributed by **Anthony Evans and Paul Brown**, Wannon Water

## **BIRDS EYE VIEW - Facilities Members Operate**

### Edmonton Wastewater Treatment Plant, Cairns

#### **Plant Features**

- 1 UV, outfall pumps and onsite reuse**
- 2 Clarifier – 2.8 ML**
- 3 Bioreactor – 6 ML Oxidation ditch**
- 4 MCC with emergency generator**
- 5 Chlorine dosing for reuse**
- 6 Lime dosing**
- 7 PTA – 5 mm Step screens**
- 8 Alum dosing**
- 9 Belt press**

#### **Location**

Swallow Road, Edmonton

#### **Service Area**

Southern estate on Peterson Road to Foster Road (western side of highway) and to Griffin Road on the Eastern side of the highway, Edmonton, Part Mt Sheridan, Part Whiterock.

#### **Capacity**

24,814 people or 6.7 ML/day

#### **Treatment Standard**

Tertiary

#### **Treatment Process**

The Liquid stream treatment is an Oxidation ditch with Clarifier. Effluent is treated with UV and discharged to Trinity Inlet. Sludge is dewatered directly out of the Bioreactor using a Belt filter press.









## 2018 PASS AWARD WINNER

The winner of the 2018 **PASS Award** was announced at the NSW Conference in Tamworth in April. The winner was the team of operators and maintenance technicians from the Sewer Reticulation Operations and the Mechanical Maintenance group at **Power and Water Corporation** in Northern Territory. The team included Michael Dixon, Quinton Caird, Stephen Casey, Michael Cartmer and Martin Zardins. Their winning idea was the development of a hydraulic gatic lid lifter to reduce the need to get contractors in with heavy machinery on a regular basis to pop stuck gatic lids.



*Two of winning team members - Martin Zardins and Stephen Casey from Power and Water NT (L) with Jillian Busch from Aqualift Project Delivery*

Gatic lids that have been in service for several years without being opened, or ones in a high traffic area, are often stuck so tightly that they cannot be opened using the standard method. This poses serious manual handling issues for operators. The Sewer Reticulation Operators asked the Mechanical Maintenance group if it was possible to develop a hydraulic lifter. After several welding bench discussions and chalk drawings, the final design was agreed upon.

The solution was to fit two hydraulic cylinders to a hand cylinder pump via a three way splitter and isolating valve. Angle brackets and Tee bolts were fabricated and fitted to the cylinders. All this allows for the lids to be hydraulically lifted with the ability to pump on one lifting point or both at once. This is especially helpful if the lid is not lifting evenly.



*The hydraulic gatic lid lifter in action popping a stuck lid*

The 2018 PASS Award had 11 great ideas submitted for consideration from SA, NT, Tasmania, Victoria and Qld. **Aqualift Project Delivery** is the PASS Award sponsor and provided sponsorship for a nominated representative from the 2018 winners to join the WIOA team on their annual operational tour of New Zealand in May 2018.

## THE POWER OF THE WIOA NETWORK

### Employer Aaron

It's not what you know, it's who you know. Well in Daniel's case it was both what he knew and who he knew within the WIOA network. After approaching us through the WIOA and LinkedIn community, Daniel started with SAFEgroup Automation during his 3rd year of engineering in a part-time position. Daniel showed early signs of being an exceptional engineer and has since become an asset to the organisation. At the start of 2018 we offered Daniel a full-time position as control systems engineer, which thankfully he accepted. Since then he has continued to astound us with his passion for knowledge and motivation for continuous learning. We are glad to have him as part of our team and are looking forward to working collaboratively with Daniel throughout his career.

### Employee Daniel

From the beginning, being a part of SAFEgroup Automation has been a huge learning experience. Guided by some of the industries best, I am consistently pushed to develop my technical skills and knowledge. I have had the opportunity to work on a variety of projects, from the development of automation systems for large scale treatment plants, to radio path analysis for council water and wastewater networks. No two jobs are the same and I am always engaged in something interesting. I am excited to begin my career within the water industry, made possible by the power of networking and organisations such as WIOA.



*Daniel Biltris*

*Daniel on site*



**Contributed by Aaron Christie and Daniel Biltris** from Safe Group Automation



## ROYCE BOWLS THEM OVER IN YANDINA

The picture was set for another perfect WIOA - McBern's Charity Bowls Day held on 9 March at the lovely Yandina Bowls Club. Amid the concerns of possible torrential rain, we ended up with a few perfectly timed showers, which also helped keep the squad of "elite" bowlers cooler than last year.

With a field of almost 40 bowlers, the day got under way with 13 teams, bowling for the Queensland Tradies' Cup. Not sure if it was a fluke, but Tom Allen, one of the Yandina Bowls Club gun bowlers and Champions, just happened to end up playing on Craig's team.

**GOLD Sponsors** for the day were McBerns, Pensar and Xylem.

**TEAM Sponsors** for the day included GHD, NETZSCH, National Pump and Energy, Royce Water Technologies and Thermo Fisher Scientific.

A big thanks to all the sponsors and the Yandina Bowls Club members who did not disappoint in cooking up a storm on the BBQ for lunch!

Congratulations to the winning team from Royce Water Technologies (Rod Wellings, Mansell Wellings and Keith Payton from Unity Water), after several countbacks and some sort of "Scissors Paper Rock" system, they made it to the Finals and took out the coveted Tradies Cup for 2018.

Once again, the raffle tickets were a hot item with some highly sought after prizes on offer thanks to the sponsor donations.



*The girls had high expectations at the start*

Overall, the Charity Bowls day was another successful event with just under \$2000 being raised for charity. Thank you to all and hope to see you all at Logan in June, for the WIOA Queensland Conference.

**Contributed by Col Haynes** from Unitywater



*Seqwater team, winners of the encouragement award*



*Qld bowlers in action*



*Not sure thongs are a legitimate measuring device*



*The Seqwater operators*

## WE NEED TO TALK ABOUT SUICIDE – AND GET TO KNOW THE SIGNS



The warning signs of suicide are sometimes subtle but learning how to identify them and raise your concerns could help change another person's life – and you don't have to be an expert to make a difference. Ground-breaking new research from [beyondblue](https://www.beyondblue.org.au) has found that while few people express their suicidal thoughts directly to others, they often show signs through changes in their behaviour.

A national [beyondblue](https://www.beyondblue.org.au) commissioned survey found everyday Australians want to help family and friends at risk of suicide but are unsure how to identify and respond to the warning signs.

- 50 per cent of participants believe assisting someone at risk requires the skills of a professional;
- 40 per cent of survey respondents believe suicide happens without warning;
- 30 per cent believe most people at risk of suicide show no sign; and
- 30 per cent believe discussing suicide could encourage a person to consider planning suicide.

Yet, according to the research, there are simple, safe steps that friends, family and workmates can take to identify and support someone at risk. There are simple things every one of us can do and say that can reduce suicide. The recommended actions arising from the research were:

- Asking the person how they are feeling and explain changes you have noticed in their behaviour;
- Listening without judgement and without trying to advise them how to 'fix' their situation;
- Asking direct questions about whether the person is thinking of suicide and has a plan;
- Showing support and suggesting they seek help from GP or a mental health professional.

Asking how someone is feeling and asking directly about suicide could be the first step to help someone to reconnect with living and get them the support they need.

Learn more about identifying and responding to warning signs of suicide at <https://www.beyondblue.org.au/the-facts/suicide-prevention/worried-about-suicide/what-are-the-warning-signs>

Mental health professionals are available on 1300 22 4636 or via [www.beyondblue.org.au/get-support](https://www.beyondblue.org.au/get-support) for online chat 3pm – 12am AEST or email responses within 24 hours.

## OUR ENGINEERING INTERNSHIP WITH WIOA

Together we've been working with WIOA since February, to scope out potential new products and services for members. A major component of the project has been taken up with market research, including interviews and market surveys.

### How did you end up interning at WIOA?

**Daniel, Masters of Chemical Engineering, University of Melbourne:** Personally, I've never worked out in industry before, so I chose this industry project, thinking it was an exciting opportunity to see what it would be like. I ended up choosing this opportunity with WIOA for a couple of reasons. The first being I find the business side of engineering quite interesting. The second was that I didn't know a lot about the water industry, and so I wanted to learn and get more involved and along the way, develop industry contacts.

**Kayley, Masters of Engineering (Chemical with Business), University of Melbourne:** This project attracted my interest as it combined the technical and the business side of industry. While my degree is a double major of business and chemical engineering, we get little to no practical experience for the business side of things. The development of content for training and knowledge sharing is a topic close to my heart as I spent the better part of last year developing a training program for my department in the student union. I was also keen on the project as I have previous experience with the food, and mining industry and wanted to gain working knowledge of another major sector.

### Personal Outcomes of the Project:

**Daniel:** So far, I've learnt an incredible amount, both technical and non-technical about the water industry, especially with the visit to a water treatment plant in Kyneton and talking with industry employees. The most valuable insight I've gained however, would be to see the relative scope and importance of the industry. Prior to this opportunity, I hadn't really considered a career in water. However, after my experience with WIOA and the operators and supervisors I've met and talked to, being employed in the water industry would be amazing, working for potentially one of the most important industries with people who are passionate about what they do.

**Kayley:** I cannot overstate how much I have learned during my time at WIOA. Daniel and I have met so many interesting people who have such a thorough knowledge of the field it can be intimidating at times. It was being on a chemical treatment plant when I was 17 that made me realise I wanted to be a chemical engineer and seeing the Kyneton Water Treatment Plant brought back those same feelings. I had not considered the water industry as an option post-graduation but after my time here I could definitely see a future in it.

One of the things that will really stick with me though is the WIOA attitude. They do the best they can with what they have and do not rest on their laurels, but continue to seek out how they could do even more.



**Contributed by Daniel Hidajat and Kayley Cuzzubbo**



## TASMANIAN INTEREST DAY – BRYN ESTYN WTP

The Tasmanian Water Interest Day took place at the Bryn Estyn Water Treatment Plant, New Norfolk on 15 May, providing an opportunity for development and general interest for WIOA members and employees at TasWater.

The clear focus of the day was on water quality and the application of preventive measures such as Critical Control Points and improved water treatment plant performance.

Mark Abela, the new Tasmanian Advisory Committee Chair, welcomed the 25 attendees and commented about the great line up of speakers for the event.

Paul Hochman (Senior Water Systems Engineer) spoke on Critical Control Points (CCP's) at TasWater and showed how a CCP is a step or procedure in which controls can be applied and is essential to prevent, eliminate or reduce a hazard to an acceptable level. In the case of a water treatment plant to prevent nasties getting through; essentially monitoring turbidity post clarification and filtration, final water chlorination and ensuring there is no overdosing of fluoride.

The Health of Water - Cameron Dalglish (Tasmanian State Water Officer), an avid brewer, reminded us that water quality incidents can have lethal effects on a community and repercussions for a water utility and its management. Flint Michigan 2014 and recently Havelock North in NZ in 2016; showing how poor water management can cause thousands of illnesses and multiple deaths.



*Cameron Dalglish presenting*

George Wall, having just arrived in Hobart via NZ, provided an update on WIOA activities, talked about the benefits of WIOA membership and showed us footage of our awesome Aussie team at the recent 'live tapping' competition held in NZ.

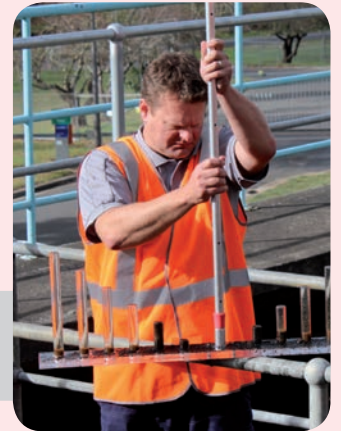
The lunch sponsor was Stornoway, one of WIOA's newest Corporate members. Camille O'Meara (GM Business Services) ran through a number of projects and installations being undertaken at TasWater.

Scott Thow (Senior Engineer Asset Planning) at TasWater talked on the upcoming Bryn Estyn/Forth water treatment plant upgrades. These are multimillion dollar upgrades on two of TasWater's major water treatment plants.

The day was topped off by a filter assessment demonstration on a live filter by Matthew Robertson (Process Engineer Water) at TasWater. The cold sleet held off just long enough for everyone to get down and dirty to see how a filter functions and discuss issues that can impact on filter performance.



*Matthew Robertson with his media sampling tool*



*Measuring the amount of media fluidisation in a backwash*



*Inspecting the sampled filter media*

Afterwards, Mark gave the Operation Control Centre staff a tour of the plant, as they are generally couped up in a room full of SCADA screens and relished the opportunity to touch and feel the plant operations. All in all, everyone had a great day and we look forward to the next event.



### WHITE RIBBON WORK-PLACE ACCREDITATION

Unitywater has been officially recognised as a leader in helping prevent and respond to violence against women.

The water and sewerage services provider has been named a White Ribbon Workplace after undertaking an accreditation program over the last 18 months.

CEO George Theo said he was proud that Unitywater's commitment to preventing violence against women had been strengthened through the program.

"This recognition from White Ribbon Australia demonstrates our long-term commitment to achieving a safe, gender equal and respectful workplace and that we have a strong stance against violence in our community," he said.

"We want our people to know that they have the resources and support available to them should they need it.

"We all have a role to play in helping end violence against women." The White Ribbon Australia Workplace Accreditation Program is nationally recognised and lasts three years.

# PROTECTING WATER QUALITY DURING PIPELINE REPAIR AND RENEWALS

In February 2018, WaterRA published a report outlining a new framework for preventing contamination during pipeline repairs and renewals.

Water main renewals, repairs after main breaks, and valve and hydrant repairs are important activities in management and operation of water distribution networks. However, repairs and renewals pose a contamination risk to drinking water supplies, when pipelines are depressurised, opened up and exposed to the environment. International studies have shown increased microbial risk associated with mains breaks and repairs, although there is very little data available from Australian utilities.

The Australian water industry expressed an interest in gaining a better local understanding of the microbial risks of renewals and repairs, including the impacts from current management practices. The **WaterRA Pipe Breaks Project** aimed to identify areas for improvement in pipeline repair and renewal management practices. Methodology used in the project included; information review, identification of current management practices for pipe repair and renewal works of Australian water utilities, and development of control framework - including evaluation and comparison of industry against the proposed framework.

## Identifying control measures and sharing case studies

To identify current management practices across the industry for pipe repair and renewal work, Australian water utilities were surveyed and case studies developed. An online survey was used to ask water utilities questions on the frequency and contributing factors for pipe break events, as well as questions on the extent of their pipe repair and renewal work procedures and practices.

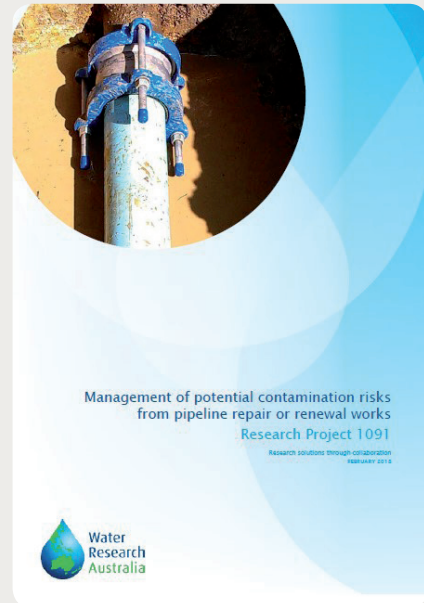
All utilities that responded to the survey reported they had either informal or documented pipe repair renewal works procedures in place, with 85% reporting they had procedures documented. Other common practices reported by utilities responding to the survey included; mains flushing, hygienic work practices (to prevent contamination of equipment), pipeline disinfection, water quality monitoring, staff training, and sub-contractor management/governance systems.

An important outcome of the investigation was the development of various case studies to illustrate examples of good practice in the areas of governance, compliance, hygiene, operator involvement, risk assessment and disinfection.

## Pipe break framework

Arising from the Pipe Breaks Project, a pipe repair and renewals control framework has been developed for use by Australian water utilities, taking into account existing control strategies and utility specific risks. Due to the varying controls used, and the degree of implementation currently being undertaken by water utilities across Australia, the developed framework is flexible while allowing areas for improvement to be identified based on individual utility risks.

The pipe repair and renewals control framework has been developed to be in line with the Australian Drinking Water Guidelines (ADWG 2011) Framework for the Management of Drinking Water Quality.



## NEW PROJECT ANNOUNCED – VALUE OF OPERATOR COMPETENCY



Water  
Research  
Australia

WaterRA has announced the launch of a new project, the “Value of Operator Competency”. The project has been awarded to WaterQPlus and will commence in May 2018. This project was developed and funded in response to growing industry recognition of the importance of Water industry operators being at the forefront of both public health and environmental protection. The production of safe drinking water and the treatment of wastewater demands a competent operator workforce to appropriately manage water quality safety risks and ensure that customer and community expectations are met.

The aim of the project is to identify the key operator competencies required for the delivery of safe drinking water and the treatment of wastewater to specification (discharge or recycling). The value to the Water Industry will be measured across a number of risk categories e.g. financial, reputation, service delivery, environmental, compliance (governance and regulatory), and considers the value to government and/or regulatory agencies and ultimately the benefit to customer and community wellbeing. It will examine current learning and development practices used by Australian water businesses and compare this to other industries with similar public health and/or environmental obligations. International water industry standards will also be considered, including the requirement for building operator skills and capability for the future.

The desired outcome is to provide a clear communication of the criticality of operator competency and of how and what value is achieved by having skilled and competent operators. Strategies that may be useful to improve current practices will be highlighted to further encourage the Australian Water Industry to integrate operator workforce competency into an organisation’s learning and development program.



# WIOA TALKS TECHNICAL WEBINAR

## Harmful Algal Blooms

The first WIOA Talks technical webinar, **Harmful Algal Blooms**, was held on 6 March 2018. The event attracted participants from Queensland, Victoria, New South Wales, South Australia and Tasmania.

The aim of the webinar was to share practical operational knowledge and experience in addressing the challenges of algal bloom events, including the impacts to drinking water sources, treated water quality and process operations.

The webinar featured three speakers, as well as an opportunity for a Q&A session for participants via an online chat. The target audience was operators, process scientists, engineers and water quality staff.

Peta Thiel (Research Laboratory Services), gave a presentation on "A Murray River Grand Tour – learnings from the 2016 Algal Bloom". Peta's talk provided an overview of the 2016 Murray River algal bloom, characteristics of the bloom, and treatment options at drinking water plants. In particular, advanced treatment options such as ozone and biological activated carbon treatment were discussed.

Greg Smith and Bianca Atley (Goulburn Murray Water), gave a presentation on "Managing raw water storages during algal blooms". Bianca and Greg's talk covered the algal management approach for source water catchments in Victoria, cyanobacteria monitoring programs, risk reduction options and managing response to algal bloom events.

Steven Newham (Goulburn Valley Water), presented on "Operational management to address algal risks for WTPs". Steven's talk covered information available on algal bloom management in the ADWG, source water considerations, dosing powdered activated carbon, managing conventional treatment processes, sludge management, and disinfection / oxidation management.



Steve Newham from GWV, Craig Mathisen and Greg Smith from G-MW

For anyone who missed out on this webinar, presentations are available for viewing (in PDF format) on the WIOA Talks web page.

## Water in Antarctica

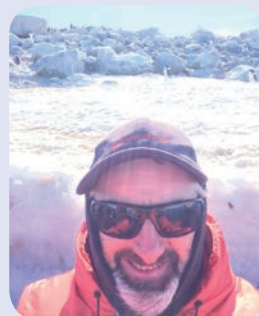
Ever wonder what it would be like to be a water operator in Antarctica? That very question was answered on 27 March, in the WIOA Talks technical webinar on Water in Antarctica.

The aim of the webinar was to highlight the various challenges of remote operations, logistics, resourcing and staffing, as well as the impact the extreme elements have on water treatment operations in Antarctica. The webinar featured five presentations, as well as an opportunity for a Q&A session for participants via an online chat.

Kathy Northcott (WIOA), Kathryn Mumford (University of Melbourne) and Tim Spedding (Australian Antarctic Division) gave a combined presentation on industry, academic and AAD perspectives towards water research collaboration through the Antarctic Science Program.

Kathryn Mumford outlined the benefits of collaboration with industry through multidisciplinary research. Tim Spedding provided further detail on the spectrum of collaborative research projects managed by the AAD, incorporating various water treatment technologies, particularly in the area of contaminated site remediation.

Gavin Allen (Veolia) gave a presentation on his role in Supporting the Antarctic Science Program – a water operator's perspective. In his presentation Gavin described his experiences working as a water treatment operator in Antarctica, to support the clean up efforts of diesel fuel spills at Casey Station.



Gavin out in the wilds of Antarctica during his summer at Casey Station

David Waterhouse (Australian Antarctic Division), rounded out the webinar with an overview of current water and wastewater processes used at each of the Australian Antarctic stations, as well as talking about some of the advanced technologies that are being implemented or are in the planning phase.

For those who missed the Water in Antarctica webinar, a highlights video is planned to be posted on the WIOA website. This will feature David Waterhouse's talk about water and wastewater treatment in Antarctica.

## MORE ABOUT THE WIOA TALKS SERIES...

### Women in Water

The WIOA Talks People & Culture webinar - Women in Water was held on 27 April 2018. It provided a focus on the programs and initiatives that have encouraged women to choose and stay in the water industry.

In 2018 WIOA will continue to provide a series of webinars to members. These will include; further updates on operator certification and recertification, technical webinars featuring key industry issues and the latest trends and technologies,

and general interest webinars on topics and issues that impact people and culture within water businesses.

For further information on the 2018 webinar program, check in on the WIOA events calendar on the website, or receive updates on events through the monthly WIOA Words newsletter. For queries, feedback, suggestions for webinar topics and presentations, or to volunteer to give a presentation at an upcoming webinar, please feel free to contact George, Craig or Kathy.

## MANAGING OUR WATER-SPOILING PESTS

TWO million people live in the Murray-Darling Basin, along with hundreds of species of native plants and animals.

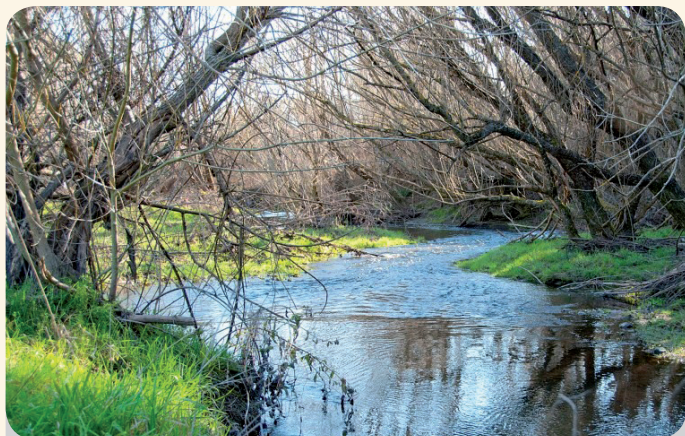
However, the Basin is home to some invasive species, too – both above and below the surface. Willow and carp are among them. Combined they not only alter habitats and displace native species across the Basin, they also reduce water quality and alter its flow.

After years of multidisciplinary research, scientists have developed new tools to help control these two feral pests.

### Thirsty willows

The weeping willow (*Salix babylonica*) and crack willow (*Salix fragilis*) are invasive European species estimated to occupy and clog more than 30,000 km of river streams across southeast Australia and displacing native vegetation. The loss in many areas of the great river red gum has reduced food sources, such as gum flowers, and taken away habitats for native mammals, reptiles, fish and birds.

The deep canopy of willows also blocks sunlight from reaching the water, making the water colder, and changing the stream ecology.



Ovens River, Myrtleford Victoria – Black willow.  
(Image: Tanya Doody/CSIRO)

“Willows have also carved out a new niche for themselves within the actual waterways—in-stream,” says CSIRO Senior Research Scientist Dr Tanya Doody. “All it takes is a broken two centimetre twig to start growing a dense system of roots and begin an infestation. This then disrupts what was once free-flowing water, and erodes the waterway.”

Doody has developed a set of tools to help water managers understand where and how many hectares of willows exist and how much water they use.

Using quantifying water balance calculation tables and an economical remote sensing technique, managers can better understand the total water savings for each infested stream if willows are removed.

The tables were calibrated using more than four years of field research and measurement of willow water use, and narrows the results down to climatic zones. The riverine willow infestations drain a substantial amount of water from waterways—from 3.9 to 5.5 ML per year for each hectare of willow canopy in cool temperate and semi-arid climates respectively, she says.

“To put this into perspective, one megalitre is the volume of water used by three average households in a year. So the returns from removing one hectare of willows is enough for about 17 households each year.”

### Below the surface

It took widespread flooding in the early 1970s for carp (*Cyprinus carpio*) to establish in the Murray-Darling. The Millennium Drought-breaking floods in 2012 took them to feral numbers.



Carp – the scourge of freshwater environments  
(Image: NCCP/Tom Rayner)

In some parts of the Murray-Darling Basin carp comprise more than 80 per cent of fish biomass, exceeding 350 kg per hectare.

They are mobile, hungry, breed quickly and can survive in polluted, shallow waters. They feed by sucking through gravel and mud, dirtying the water and blocking sunlight from aquatic vegetation. This impacts plankton, aquatic invertebrates, waterbirds and native fish. This can cause blue-green algal blooms. Carp can also get into irrigation infrastructure and block pumps, causing significant financial losses.



Ecologist Dr Tom Rayner  
holds an adult carp  
collected during fish  
surveys in the Macquarie  
Marshes, NSW. (Image:  
Roger Scott).

Dr Klaus Joehnk, Team Leader of modelling water ecosystems, is developing an all-in-one hydrological, demographic and epidemiological modelling tool to guide a national release strategy of the carp herpes virus. The strategy should be ready by the end of 2018 via the National Carp Control Plan.

“We are trying to maximise the efficiency of the virus, which is transferred through body contact, but is also dependant on water temperature and other environmental factors,” says Joehnk. “We’ve integrated this knowledge across our team, which includes health & biosecurity epidemiologists and RMIT University mathematicians, to tackle the question of when, where, and under which conditions carp aggregate in the connected river system.”

### Looking ahead

Managing the ecosystems through the removal of these pests is critical.

The removal of willows is labour intensive and expensive: in Victoria alone, the cost to the state is \$2 million per year. The biggest problem is what happens to the site after the trees are gone: including the impact on bank stabilisation and the effect on local biodiversity, ecological function and water quality.

Just outside Canberra, willows along a nine kilometre-stretch of river were recently sprayed, costing 100s of 1,000s of dollars.



But the biodiversity remains as low as when the willows were there.

“Native vegetation should be reintroduced, but that doesn’t always happen,” says Doody. “The process of managing willows is long, risky and not always easy.”

Joehnk also cautions that the initial release of a carp herpes virus needs to be followed by other measures to keep carp biomass at low levels—such as introducing daughterless carp to reduce breeding opportunities.

“The knowledge output of this simulation tool allows for a strategic release of the virus. This minimises the hazards associated with massive carp kills, such as organising the removal and processing of dead carp biomass.”

Combined, both sets of tools will help greatly with managing invasive species, and returning water quality and quantity back to the Murray-Darling Basin.

Extracted from the CSIRO’s “ECOS e-News Murray Darling Ecology special issue” – May 2018. The full article can be obtained from <https://tinyurl.com/ya6sszgp>

## WORLD’S RIVERS FILLING WITH DRUG WASTE

Rivers across the globe contain nearly two and half thousand tonnes of over-the-counter and prescription drugs waste, according to researchers.

Researchers have found that more than 10,000 kilometres of the world’s rivers have well-above average concentrations of diclofenac – a common anti-inflammation drug. Along with diclofenac, the range of drugs that have been found in rivers include analgesics, antibiotics, anti-platelet agents, hormones, psychiatric drugs and antihistamines. All were found to pose a threat to ecosystems, including wildlife.



*River pollution – its much more than the rubbish we throw away  
(The Source CC Image)*

According to another report by UN Environment published in December 2017, around 70 percent of antibiotics consumed by humans find their way into natural environments.

The volume of toxic pharmaceuticals entering waterways could increase by two-thirds before 2050, scientists have warned. A proportion of the overall amount was found in human waste, with a smaller fraction of 7 percent found to be filtered out by treatment plants. Ecosystems absorb some 20 percent, with the majority absorbed by oceans.

Regions in which pollution levels are most likely to rise included Latin America, Africa and Asia, due to a lack of technological advancement in wastewater treatment. This was found to be a serious problem particularly in sewage systems of urban areas of these countries.

**Extract from The Source**, International Water Association, April 11, 2018

## CORPORATE MEMBER NEWS

### AUSTRALIA MANUFACTURING CAST-IN-PLACE PIPE EPOXY

The growing populations and economies of the Asia-Pacific region place more and more constraints on the maintenance and operation of urban infrastructure.

In particular, it is becoming increasingly difficult to efficiently manage the many thousands of kilometres of pipelines that are buried beneath cities and towns. The continual expansion of urban environments makes accessing these pipes difficult when repairs are necessary. Maintaining the structural integrity of pipelines—both the coatings and linings—is essential for safety of the asset and the surrounding environment.

Large ruptures of pipes requires the damaged sections to be dug up and replaced. However, according to Peter Morgan, Managing Director of Rhino Linings Australia (RLA) there are now methods available to repair breaches that can be carried out without the expense of disrupting roads, railways and other public or private property.

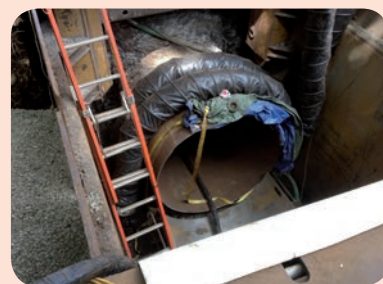


Cast-in-Place Pipe (CIPP) involves relining a damaged pipe with an epoxy resin. A mesh sleeve—like a large tube sock—is soaked in the resin and then pulled through a length of pipe. The sleeve is inflated with air or steam to conform

to the contours of the pipe and allowed to cure, forming a new, smooth inner surface.

Morgan stated that the CIPP method was increasingly being used by councils and utility companies throughout the region to repair water and sewer pipes. “CIPP is ideal for both the structural and lateral water pipes in our cities,” he added.

The resin and hardener system provided by Rhino Linings for use in pipe rehabilitation is designed to have a life span of a minimum of 50 years. This life span is dependent on using the system in accordance with Rhino Linings Product Data Sheet and following the methods of the relevant Standards.



The Gold Coast-based company has been manufacturing CIPP resins for several years, but many companies involved in the relining industry still buy the material overseas and have to contend with the many supply delays and disruptions.

All products RLA manufactures in Australia are regularly tested to ensure continued compliance with appropriate Australian Standards and international guidelines. “A large part of the CIPP market is in water and wastewater so we made sure that the material we supply to our customers meets the highest standards,” Morgan stated.

For further information, please visit the Rhino Linings Australasia website: <http://www.rhino linings.com.au>

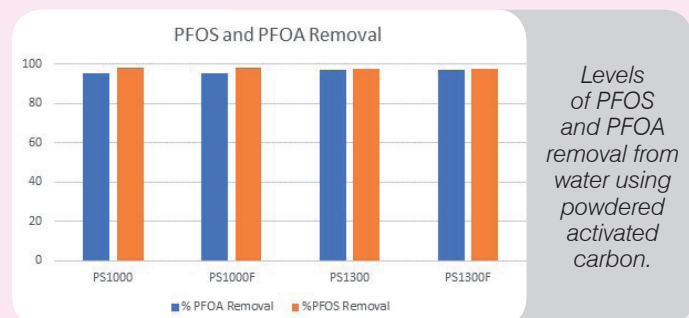
### PFAS REMOVAL FROM DRINKING WATER USING ACTIVATED CARBON

Activated Carbon Technologies Australia (ACT) manufactures and supplies specialist, high quality activated carbon products for municipal and industrial water treatment plants in Australia, New Zealand and global markets.

Perfluorooctane sulfonate (PFOS) is a man-made chemical that had been commonly used in a range of household products and specialty applications, including in the manufacture of non-stick cookware; fabric, furniture and carpet stain protection applications; food packaging; some industrial processes; and in some types of fire-fighting foam. PFOS is very stable and does not readily break down in the environment. It can persist for a long time both in the environment and in humans, potentially posing long term chronic health risk.

Some drinking water treatment plants in Australia have detected low levels of PFOS within their raw water sources. In North America and Europe activated carbon has been demonstrated to be a proven technology for PFOS removal, with granular activated carbon (GAC) filtration in particular shown to absorb and retain influent PFOS. One ACT customer has provided feedback that GAC filters using GS1300 media with an empty bed contact time (EBCT) of 10 minutes removed over 99.9% of PFOS and PFOA from storm water containing over 200 µg/L of each substance, reducing both PFOS and perfluorooctanoic acid (PFOA) to below 0.05 µg/L in the treated water.

ACT has also carried out jar testing to assess the ability of its powdered activated carbon (PAC) products to remove these contaminants. Using feed water with total PFAS (the chemical group to which PFOS and PFOA belong) levels of approximately 10 µg/L, ACT conducted jar tests on a range of PAC products, with a contact time of 60 minutes to approximate PAC addition/mixing/coagulation/settling times in a full scale plant.



At a dose rate of 50 mg/L, all 4 PACs removed more than 95% of influent PFOA and PFOS, and reduced levels of both contaminants to below 0.05 µg/L after simulated gravity filtration. This shows that the Australian manufactured PAC is a viable treatment option for PFOS and PFOA removal from drinking water.

If you're concerned about the ability of your treatment process to remove PFAS, contact us to discuss activated carbon treatment alternatives. We can organise laboratory scale jar or column testing as well as full scale, on site pilot plant testing to provide you with process selection and optimisation certainty for proven PFAS removal.

Email: [petathiel@activatedcarbon.com.au](mailto:petathiel@activatedcarbon.com.au)  
Website: <http://www.activatedcarbon.com.au>

### IS THAT A DAF IN YOUR SHOPPING CART?

DAF manufacturers are getting more enthusiastic about the application of DAF technology in new areas of treatment or processing. Applying existing DAF technology for a new purpose can have its rewards, although it can be dangerous unless the principles of DAF are fully understood.

The specific design and features of a DAF system really do matter, as an incorrectly designed system can absorb considerably more power than it needs to, and it can take up unnecessary space or, it simply may not work!

There are two general areas to a DAF design, being firstly, the actual hardware and secondly, the process. It is the process side of the equation where knowledge, experience, skill and - equally as important - having the ability to apply the technology to the application is most critical.

The most commonly overlooked aspect of designing a DAF is getting the air-to-solids ratio correct. This is basically a ratio of the mass of air that is dissolved and released into the incoming stream to the mass of solids that are present. Many text books will suggest a range of anywhere between 0.01 and 0.2, but this is 20-fold difference. Given that the pumps used to generate the dissolved air stream are by far the most power-hungry component in a DAF system, if you are generating 20 times as much dissolved air than you need to, you are paying way too much in electricity.

At Hydroflux, we design each DAF system to suit the application in question. Our intelligent software program considers a wider range of factors including solids load, temperature, surface loading rate, solids loading rate, fluid density and air solubility. This is to ensure that the dissolved air system is ideal for your application and not simply based on a text book guideline.

DAF systems are not inexpensive and are required to be extremely reliable - often having to operate 24 hours a day, 365 days a year. So, making sure that your system is designed specifically to meet your needs is of paramount importance. The capital cost for a properly designed DAF system may be a little more, but it may actually be a lot less, and you can be assured that a DAF system from Hydroflux will present far less problems and certainly incur lower costs in the long term.

Contact: John Koumoukelis, HYDROFLUX EPCO by  
Email: [info@hydroflux.com.au](mailto:info@hydroflux.com.au) or visit our  
Website: [www.hydroflux.com.au](http://www.hydroflux.com.au)



A Hydroflux HD100 HyDAF System



### AERATION BLOWER – SELECTION AND TESTING

We don't pay for the air we breathe, however the cost of air used in industrial and process applications can be substantial. Supplying compressed air (oxygen) to the activated sludge basins typically consumes over 50% of the total energy used in wastewater treatment, some sources claim up to 75% of operating costs are related to the aeration blowers. Therefore, it will pay off for aeration blowers to be optimally sized and selected very carefully.

It should be noted that API 672 classifies as blowers or fans only those centrifugal machines that develop pressure rise less than 35 kPa(g) (approx. max. 3.5 m of water), therefore, we use the term blowers and compressors interchangeably in this article.

With many technologies and brands available, it can be quite challenging to evaluate different blowers/compressors and select the best technology for your system. Therefore, it is prudent to remember; there are two different blower technologies:

- 1) Positive Displacement (screw, lobe...)
- 2) Dynamic (multistage, integrally geared single stage, high speed turbo blowers with magnetic or air bearing...), and

blower manufacturers might refer to different efficiencies on their performance data sheets (adiabatic, polytropic, isentropic or isothermal) and also offer different guarantees, testing regimes and tolerances.

Keep in mind that ambient conditions and process requirements change all the time, therefore blowers preferably should be sized for; maximum ambient temperatures to be able to operate and keep bacteria alive in extreme conditions, and maximum turndown at consistent high efficiency across the full operating range to address changing process requirements.

Once the preferred technology is selected, the decision must be made on the test performance guarantee regime.

There are two main different internationally recognised performance testing standards applicable to two technologies; **ISO 5389** – Turbocompressors -Performance Tests Standard (which was based on ASME PTC 10). Applicable to some dynamic technologies, and **ISO 1217** - Displacement compressors – Acceptance tests.

To our knowledge, to date there is no internationally recognised performance test code for the direct drive turbocompressors. The proposed Annex G to ISO 5389 (ASME PTC 13) which aims to resolve this issue it is still under development. The ASME PTC 13 and annex G will replace the ISO 5389 and the ASME PTC 10 and cover all centrifugal compressors/blowers. Some manufacturers of direct drive high speed turbo blowers (magnetic bearing and air bearing) partly follow the ISO 5389 and combine test procedure with their own OEM standard, this is why inconsistencies between various suppliers can be noticed. Mentioned inconsistencies are the trigger of a more advanced testing regime such as ISO 5389 Annex G.

The commonly used term “wire to air” (or wire power) is often misrepresented and misunderstood. Therefore, it is critical to be fully aware of how power is measured, what is included in the total power of the package and what performance testing regime is being offered as part of the performance guarantee.

TurboCompressor Selection & Justification (TSJ PTY LTD) are consultants and Australian Agents for Next Turbo Technologies. Please call us if you require assistance in selecting the right blower technology for your system. [www.tsj-use.com.au](http://www.tsj-use.com.au), [witek@tsj-use.com.au](mailto:witek@tsj-use.com.au)

### WATER QUALITY RISK MANAGEMENT WANTS YOU!



As a specialty water quality risk management company, WaterQPlus is called upon each year to facilitate numerous risk assessment workshops.

These workshops aim to identify the water quality hazards that exist within a water supply system – catchment through to customer tap or discharge / reuse point – and then to assess the risk posed by each to water quality safety. A process commonly referred to as HACCP or Hazard Analysis and Critical Control Point assessment.

Some of the most productive HACCP workshops facilitated have been the ones with the greatest attendance and input from the Operators. It is the knowledge and experience of an Operator that truly adds substance to the risk outcomes derived. Operators provide information that cannot be obtained from SCADA trends, reviewing historical water quality data or by collecting additional water samples for analysis. It is sometimes critical information that can elevate a risk to capture the attention of management and prompt much needed investigations and remedial action.

**Here's an example:** During many HACCP workshops a control measure given for disinfection management is – the chlorine (hypo) dosing pump is a duty / stand-by arrangement.

Great! – in the event one pump fails, switch duty to the one working pump until repairs are complete. Perfect world stuff! During a workshop the Operator in the room informs that chlorine residual would only be maintained at the plant being assessed during the low flow winter months. During the warmer months the dosing pumps operated in a duty / duty mode to maintain chlorine residual. This had been the Operators experience over the past several years as water quality challenges had increased chlorine demand. This was also coupled with increased chlorine targets to meet a disinfection contact time (CT) for the system. Where once the capability of the duty / stand-by chlorine dosing pump arrangement may have been adequate it was now questionable. An elevated risk of supplying customers with treated water that **had not received adequate disinfection** existed and warranted further investigation / remedial action.

The above example is Operator input that *is invaluable to achieving a proactive and preventative water quality risk management culture.*

So next time you're invited to attend the HACCP workshop for your water supply system, think twice before responding with “sorry I can't make that day we have ‘critical’ maintenance scheduled”. Come along have your say, provide your input, share your experience and knowledge. Because water quality risk management really does **WANT YOU!**

For more information on water quality risk assessments and workshops, contact Sallyanne Bartlett: M: 0408 219 245 E: [sbartlett@waterqplus.com.au](mailto:sbartlett@waterqplus.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** include:

Warren Cutts, Klausch Schmidt, Peter Mylan, Tim Hardcastle, Greg Harmer, Carmen Whittaker, Alison Moroney, Joseph Fuller, Blake Giddy, Raj Kurup, Dave Reid, Andrew Depree, Ivan Wady, Peter Clark, Simon Booth, Kafil Uddin, Todd Trench, David Longmuir, David Perry, Carly Carter, Marnie Coates, Lisa Proctor, Scott Thompson, Ross Shaylor, Stephen Westgate, Wayne Phillips, Ben Nurflus, Robert Doughan, James Skaife, Trevor Reason, Fahaivalu Finau, Guy Mathieson, Michael Krol, Glenn Alford, Shane Wilson, Brett Cameron, Kristy Elrington, Robbie McDonald, Gary Turner, Darren Wise, Ian Allsopp, Lachlan Little, Doug Tovey, Brokke Mudridge, Greg Morrow, John Ducat, Michael George, Darren Clark, Wesley Trotter, Patience Kinnane, Tim Kiddle, John Webb, Warren McCoid, Don Cowan, Derek Van Someren, Dean Narcisi, Colin Langman, Mark Donnelly, Kieran Adshead, Jon Hill, Rod Harland, Brenton Riley, Chris Smith, Juan Burbano, Nathan Rogers, Shane McRae, Ryan Porter, Jessie Durning, Jennifer Harris & Michael Hodges.

New **Utility Corporate Members** include:

Hunter H20, Whitsunday Regional Council & Lachlan Shire Council

New **Corporate Members** include:

EJ, iQSafety, Sort It Water Treatment Services, Active Environmental Solutions, KOR Equipment Solutions, ISC Services, South Burnett Regional Council, Crusader Hose, Boral Cement, Integral Alliance, Pump Power Australia, IOTA Services, West Vic Industrial Supplies, Stornoway Maintenance, Great Plains Industries, VFV & Iplex Pipelines.

## COMING EVENTS

**2018**

26 June

**WIOA Talks Webinar - Operator Certification, Online**

5 July

**3rd Biggest Ever (Laurie Gleeson) Dinner for the Prostate Cancer Foundation, MCG Melbourne**

25 July

**Water Interest Day & Ixom Best Tasting Tap Water in Tasmania, Launceston**

14 August

**NSW Water Interest Day, Wagga**

6 September

**Ixom 2018 Victorian Water Taste Test, Bendigo**

### 2018 Conference and Exhibition Schedule

6 & 7 June

**43rd WIOA Queensland Water Industry Operations Conference & Exhibition, Logan**

1 & 2 August

**1st WIOA South Australian Operations Conference & Expo, Murray Bridge**

5 & 6 September

**81st WIOA Victorian Water Industry Operations Conference & Exhibition, Bendigo**

## CONGRATULATIONS ROBRAN

Congratulation to WIOA's South Australian Advisory Committee Chairman, Robran Cock for playing in the cricket team that won the grand final recently. Robran is second from left in the front row. From all reports, if you make yourself captain, you're guaranteed a game and batting and bowling averages are irrelevant.



*Congratulations Robran*

## 2018 Committee

### President

**Adrian Rijnbeek**  
Mob 0419 698 367

**Lindsay Walsh** Mob 0427 105 421  
Chairman NSW Advisory Committee

**Colin Haynes** Mob 0419 763 054  
Chairman Queensland Advisory Committee

### Vice President

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**Robran Cock** Mob 0407 226 130  
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**Mark Samblebe** Mob 0400 126 141

**Sally Taylor** Mob 0409 307 554

**Glenn Alford** Mob 0423 622 146

## NEXT EDITION

**Article Contribution Deadline for the next edition is 9 July 2018**

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