OPERATOR

August 2017 Edition

W-I-O-A Australia
EXCELLENCE IN OPERATIONS

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Newsletter of the WATER INDUSTRY OPERATORS ASSOCIATION OF AUSTRALIA

FROM THE MD'S DESK

Hello to all our Members and welcome to the third instalment of Operator for 2017. With just three months since the last edition, you could be excused for thinking that not much would change. How wrong you would be, as the majority of this column is about "new stuff" for WIOA.

We are extremely excited to announce that Kathy Northcott will join the WIOA staff on 2 October in the newly created role of Technical Operations Officer. Kathy has been a long term supporter of WIOA in her various roles in the water industry, including at Melbourne Water and most recently at Veolia. She brings a wealth of enthusiasm, technical knowledge and experience, and we are sure that she will help WIOA expand the range of services and opportunities we can offer to our members.

After around six months of development work, followed by an industry consultation period, the Water Industry Skills Taskforce (WIST) approved the *Certification Framework 2017 - Operators within Wastewater and Recycled Water Treatment Systems* at their June meeting. This new Framework replaces the Queensland Sewage Treatment Plant Operator Certification Framework.

In another endorsement of our hard work and commitment to the certification process, the WIST also appointed WIOA as the certifying body for Wastewater and Recycled Water operators. As a result of an implementation trial between WIOA, ***qldwater*** and a number of SEQ Water businesses, we certified our first six wastewater operators at the WIOA Queensland Conference in June. There are a number of other operators currently completing their training and we look forward to certifying them later in the year.

The turnout for the Queensland conference in June was outstanding and we had record attendance numbers. The support from our hosts in Seqwater and the members of the Queensland Advisory Committee was awesome, with a large workforce at the event sharing the workload around. A full report on the conference appears later in this edition.

We also ran the first Mains Tapping Competition at a WIOA Queensland conference with the help of Gold Coast Water and Logan City Council staff. There is a similar event being held for the first time at the Victorian conference in Bendigo. With support from Reece Civil, Coliban Water and the participants in the Victorian Network Operator Development Program (NODP), the main tapping competition will be a great spectator opportunity. Like any good competition, it will be interesting to see if any of the Victorian teams can match or beat the time set by the winning Queensland team.

Whilst mentioning conferences, the Victorian event in Bendigo in the first week of September has received extraordinary support with all 204 available exhibition sites allocated to companies within 26 hours of going on sale. There were also more than 50 paper abstracts submitted which caused the Technical Committee a major paper selection headache. Due to the number of high quality abstracts submitted, for the first time at any WIOA conference, the Committee has decided to run a concurrent papers stream for two sessions on Thursday. This will allow us to provide a balanced program and gives us the opportunity to present two special workshops as well.

The inaugural Victorian Network Operator Development Program is drawing to a close with the last of the seven formal sessions to be staged in mid-August. The feedback from the participants and their employers has been really positive and we look forward to the presentation of the inaugural Victorian Network Operator of the Year. It won't be long before we will be calling for nominees for the 2018 program, so please give this some thought.

Demand is increasing for WIOA to run more of our very popular Water Quality Awareness in Distribution Systems seminars. WIOA is investigating whether we can provide an opportunity to undertake an assessment to allow the issue of a Statement of Attainment for unit NWPNET013 as well.

For some time the WIOA Board and staff have been working on a project to enhance WIOA's Information and Communication Technology capabilities. As part of the ICT project, we are investigating options including a website update, e-Commerce options, along with new platforms for management of our membership, events and certification data. In the first stage of the project, our staff have been busily working in the background on an update to the WIOA website to give it a more modern feel and to make it more user friendly for mobile devices. We intend to launch the new site at the Victorian conference. As with all new platforms, we assume there will be some minor issues to rectify and we ask that all members provide us your feedback when the site goes live.

Our WIOG NZ cousins hosted 15 Australian Operators in May this year as part of the annual Operators tour to New Zealand. The reports from the participants have been extremely positive. There will be eight Kiwi operators coming over to attend the Victorian WIOA conference in September and in another first, they will get to visit some plants in South Australia as well as Victoria.

Later in this issue there are reports on the very successful Taste Test and Operations Interest Days held recently in South Australia and Tasmania. A big thank you is extended to Alister Laidlaw and Dean Barnett for delivering the Keynote presentations in South Australia and Tasmania respectively. Once the Victorian Taste Test is completed at the Bendigo Conference, we will know the 5 State based Taste Test winners for 2017. Just like 2016, we will be staging a national grand final during Water Week on 18 October in Launceston. The sample judged the best in the nation will then represent Australia in the International Taste Test competition in the USA in February 2018. The sample from Barrington in Tasmania finished in the top 10 in 2017 so we look forward to this year's winner getting back on the podium in 2018.

As we move into the second half of the year, the Advisory Committees in all States are ramping up their activities, with a range of Interest Days and other events planned. Engagement, ownership and participation by members in all States is a vitally important part of our future plans. We hope that members will support the efforts of the Advisory Committee members, attend the events and participate in all the other opportunities on offer to network and share knowledge.

Until next time,

George Wall – WIOA Managing Director

PROFILE OF A MEMBER

Name: Mick Mahoney

Position: Manager Civil Maintenance

Employer & Location: Wannon Water, based in Warrnambool

How long have you worked in the water industry and what attracted you to it?
17 Years – my wife worked in Customer Relations for South West Water back when I started, so I had a good understanding of the variation of the work within the sewer collection network and water distribution network. I was basically a labourer up until this point driving trucks, working in quarries and the like, so I saw it as a great career opportunity.

What do you enjoy most about your job?
Being able to assist in the professional development of our operators. It is great to see not only the younger operators, but also the more experienced ones being presented with opportunities to further their knowledge and skills with Certificate 3 and now Certificate 4 in Water Industry Operations. Now with the Network Operator Development Program the industry's Operators will also be able to build their own professional network and be recognised for their skills not only within their own business but across the Victorian Water Industry. Sorry, had to give it a plug!

What are the major challenges in your current role?
Ensuring that as a business we continually look at ways to assist our operators in providing efficient services to our customer base. There are a lot of new technologies to aid in maintaining our assets, choosing the correct one for specific applications while maintaining our efficiency can prove challenging, business cases are always fun!

How long have you been a WIOA member?
Good question, a long time? I have been to many conferences and presented at a Special Interest Day in Bendigo a while back. I attended my first Weekend Seminar and AGM at Eildon this year which was a lot of fun with some great people.

How do you relax?
Wood cutting on a mates farm in the beautiful Melville Forrest area above Coleraine, fishing, helping out with the local Rec Reserve and Cricket Club, pottering around the shed and I'm a bit partial to Carlton Draught.

Where do you live and what's the best thing about it?
Woolsthorpe which is a small village 20 minutes north of Warrnambool. A great little community with a fantastic primary school, General Store and a Pub.

ADDRESSING SKILLS FOR THE FUTURE

Shannon Thomas is Queensland Urban Utilities (QUU) newest operator in the Scenic Rim having joined the team just over a month ago. Shannon really enjoys the job as she prefers working outside and really enjoys all of the learning that is required for all of the different plants the she will operate. QUU have booked Shannon in to undertake the Certificate III in Water Operations and a short course with IWES to accelerate her understanding of the water industry.

From a supervisory point of view, Shannon has already proven to fit in well with the rest of the team and is quick to learn what is required of her. I am hopeful that this will enable us to plan for succession in the team and not just rely on employing experienced operators from other organisations.

Another innovative approach QUU are undertaking is arrangements for their first School Based Traineeship with Beaudesert State High School. Lita is currently in year 11 and will be completing her Certificate II in Water Operations during years 11 and 12. She has already spent some time with QUU as part of a work experience program and is keen to commence her school based traineeship.

Contributed by Mike Oakey from QUU

QUU - Shannon Thomas checking out the exhibition in Logan.

2017 QUEENSLAND CONFERENCE REPORT

The **42nd Queensland Water Industry Operations Conference and Exhibition** saw a record number of people from across the water industry attend the event at the Logan Metro Sports Centre on 7 & 8 June 2017.

Dr Kirsty McCulloch from the Human Systems Group engrossed attendees with her Keynote presentation on fatigue management. Paul Heaton from Gold Coast Water & Waste provided an engaging look at change management and the challenges being undertaken on the Gold Coast in preparation for the 2018 Commonwealth games.

The opening session included the presentation of the credentials to the first six Wastewater Operators awarded Certification under the WIOA Water Industry Operator Certification Scheme.

At the Awards Dinner held on Thursday evening, **John Holmes** from Whitsunday Regional Council won the Leon Henry Memorial, 2017 Queensland Operator of the Year award, and **Harry Coleman** from Toowoomba Regional Council was the winner of the 2017 Young Operator of the Year Award.

The Award for the Queensland Operator of the Year (Civil/All Rounder) went to **Glenn Cook** from Gladstone Regional Council and a Special Commendation was also presented to **Andrew Watson** from South Burnett Regional Council for the contributions he makes to the industry.

A number of other operational employees were recognised at this event including **Marcus Boyd** from Toowoomba Regional Council who won the Best Paper by an Operator as well as the Brian Davis Award for Best Paper Overall.

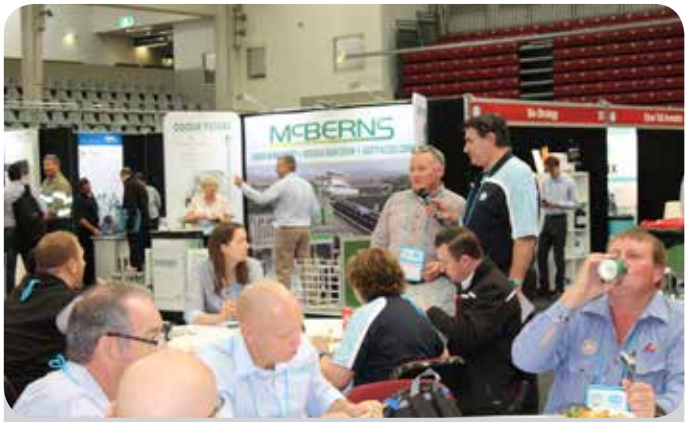
Once again the event included a comprehensive exhibition with 112 sites where companies exhibited the latest in equipment, services and process technologies available to the water, wastewater and liquid conveyancing industries. **The Cadia Group**, after being highly commended in both Victoria and NSW, was awarded the Ron Bergmeier Award for the Best Exhibition Site.

The conference again hosted the Ixom Water of Origin Taste Test that saw the Queensland entry from Toowoomba Regional Council defeat the sample from Icon Water in Canberra, representing the ACT/NSW. Queensland now holds a 4 to 1 margin over NSW and will no doubt be back to take them on again in 2018.

WIOA also hosted the Queensland Mains Tapping Competition that was a great spectator sport. The team from Gold Coast Water & Waste – **The Tapping Tubbies** recorded the best time of 1 minute 47 seconds to win the title for the second year in a row. Reece Civil and Ixom supported the competition that saw $1,000 donated to Animal Welfare League on behalf of the Tapping Competition winners.

After running a Charity Bowls Day earlier in the year and a raffle at the conference, WIOA presented a cheque for $3,000 to the **SEQWater Innovation Team** to assist them towards their fundraising goal on behalf of WaterAid. Thanks to all the members and supporters who helped raise these funds.

The exhibition is always a great chance to see the latest the industry has to offer.



John Mills form Toowoomba RC being interviewed by George Bellizia during the Water of Origin.

Ian Johnson presenting his paper.

Pete Booth entertains the crowd on Wednesday night.

QLD CONFERENCE 2017 AWARD WINNERS

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

Queensland Operator of the Year

John Holmes from Whitsunday Regional Council

Queensland Young Operator of the Year

Harry Coleman from Toowoomba Regional Council

Queensland Operator of the Year (Civil/All Rounder)

Glenn Cook from Gladstone Regional Council

Special Commendation to Andrew Watson from South Burnett Regional Council

Brian Davis Award for Best Paper Overall – sponsored by Iwaki Pumps

Marcus Boyd from Toowoomba Regional Council

Nalco Water Awards for Best Paper by an Operator

1st **Marcus Boyd** - Toowoomba Regional Council

2nd **Martin Coromandel** - Queensland Urban Utilities

3rd **Andrew Watson** - South Burnett Regional Council

Ixom Water of Origin Taste Test

Queensland (Toowoomba Regional Council) v NSW/ACT (Icon Water)

Won by **Queensland**, Toowoomba Regional Council represented by John Mills

Ron Bergmeier Award - Best Exhibition Site

Cadia Group

Queensland Mains Tapping Competition

1st **Tapping Tubbies** - Trent Roberts and Spencer Stacey from City of Gold Coast (1.47min)

2nd **Kool Tapping's** - Matt Pochadyla and Daniel Lee from City of Gold Coast (2.00min)

WIOA Conference Charity

$3,000 Presented to **Water Aid via Seqwater** Innovations Team

$1,000 donated to **Animal Welfare League** from the Tapping Competition winners

Winner Best Paper by an Operator, Marcus Boyd (L) from Toowoomba RC with George Wall.

Winner Best Paper Overall – Marcus Boyd (L) from Toowoomba RC with Shane Shane Wholsen from Iwaki Pumps.

The team from Cadia took out the Ron Bergmeier Award for Best Exhibition Site.

QUEENSLAND OPERATOR OF THE YEAR

John Holmes from Whitsunday Regional Council was named Queensland Operator of the Year at this year's WIOA Queensland Conference and Exhibition held in Logan.

A senior treatment plant operator, he has 27 years of experience. Combined with tertiary education and professional development training, John is a very professional and motivated employee who brings a wealth of experience and knowledge of the water industry to his role at the Whitsunday Regional Council.

John was nominated for the award for his knowledge of the plants and his ability to predict and troubleshoot issues, his inclusive and mentoring management style with his staff, and his drive to optimise the plants without compromising on safety or compliance.

However it is John's attitude that encompasses all the qualities the position of Senior Treatment Plant Operator, leader and mentor necessitates. John possesses the ultimate "can do" attitude while taking on all tasks with a positive energy and a smile. His friendly nature and engaging personal style enables him to interact effectively with clients and staff. John is very well organised and has developed, coordinated and implemented numerous capital works projects on time and under budget. John has been able to build effective working relationships between external contractors, regulators, peers and colleagues alike.

Nothing exemplified John's high level of skill, knowledge or ability to get things done more than his efforts during the regions recovery efforts after Cyclone Debbie. John was instrumental in the coordination of plant and equipment that ensured that Airlie Beach, Cannonvale and Shute Harbour were only out of water for four days. This involved manually running the plants, as well as organising generators and refuelling pods for 11 days while the region was without power that whole time. He also had to troubleshoot electrical and mechanical faults such as VSD drives blowing up, bore motors faulting as well as organising contractors. This was an amazing achievement to only be without water for 4 days after a direct hit from a category 4 cyclone, demonstrating outstanding knowledge of his plant and network.

John also showed a high level of knowledge in plant processes and programming when he came up with innovative ideas to enable the water treatment plants to come back on line when there weren't enough large generators. This involved manually sequencing the start-up of the plants to draw the least amps possible. His ability to think outside the box was also tested in coordinating the running of multiple bores after continual failures due to cyclone damage.

QLD Operator of the Year John Holmes(R) with Sandra Hall from AWA QLD.

QUEENSLAND YOUNG OPERATOR OF THE YEAR

Harry Coleman from Toowoomba Regional Council has been recognised as the 2017 Queensland Young Operator of the Year award winner.

Harry Coleman (R) with Dave Cameron from ***qldwater****.*

Starting as an industry trainee three years ago, Harry jumped at the opportunity to become a full time Assistant Operator. After completing his Certificate III in Water Treatment, he requested to complete extra modules based on Wastewater treatment which will set him up for Certificate IV, Diploma and Certification in the future. Harry is willing and able to help other operators with implementing new technology in the workplace including setting up iPads and hooking up bluetooth in utes and other vehicles. His technical skills allowed him to operate and optimise a new Water Treatment Plant fitted with the latest technology.

QUEENSLAND OPERATOR OF THE YEAR (CIVIL/ALLROUNDER)

The 2017 Queensland Operator of the Year (Civil/Allrounder), Glenn Cook from Gladstone Regional Council has worked for many utilities around Australia.

Glenn has a passion for learning, achieving a raft of qualifications since joining the water industry. Armed with a Certificate IV in Water Operations and a Certificate IV in Business Frontline Management, Glenn has significantly improved work culture among operators in his team, implemented an improved sampling regime at all wastewater treatment plants and overhauled a number of workplace health and safety requirements in his workplace.

Glenn Cook (L) with Dave Cameron from ***qldwater****.*

Special commendation

A special commendation went to Andrew Watson from South Burnett Regional. Described as a valuable mentor who goes above and beyond in the operation of treatment facilities throughout the region, Andrew has been instrumental in the successful construction and commissioning new Water Treatment and Wastewater Treatment Plants in Kingaroy.

LATEST IDIOTS MEMBER

Ian Cuthbertson from Seqwater in Queensland is the latest WIOA member to be Inducted as a Delegate of the Inextricably Obstructed Tap Society, joining what is commonly known by the acronym, an IDIOTS member. He joins 32 other individuals who have been recognised by WIOA for their outstanding service to the Association

Ian joined WIOA in June 2008 and has been a member for just on 9 years. He has attended all but three WIOA Queensland conferences in the 10 years since 2008. He has even taken annual leave to come along and help out, when it wasn't his turn to attend on behalf of his employer Seqwater.

Ian doesn't like the limelight, he prefers to get on with things in the background and helps make sure everything runs smoothly. We do know though that he has encouraged some of the other Seqwater operators to have a go at a platform or poster paper at one of the conferences.

In August 2011, when WIOA created the Qld Advisory Committee, Ian was one of the inaugural Members who put his hand up to help out. He has been an active member of the Qld committee ever since.

He has been a regular at the Qld Charity Bowls Day in Yandina, has organised and participated in a number of the Qld interest days and has written reports and articles for Operator.

In 2008 he was jointly awarded the Qld Operator of the Year award with another great WIOA stalwart in John Paulger from Toowoomba. The photo of these two "giants" flanking the tiny frame of Rob Drury from AWA is really quite funny.

Through his contribution, Ian has played an important role in allowing WIOA to expand and gain the acceptance we now enjoy in Qld. We need more committed members like him. Congratulations on your efforts from all of us!

The award presentation was conducted at the President's dinner on the Tuesday evening before the Queensland conference. When inducted into the society all IDIOTS are required to undertake a task of some description to prove their worthiness. Following closely after the 2016 Olympics and in the lead up to the 2018 Commonwealth Games just down the road at the Gold Coast, the theme of Ian's challenge was along the lines of the modern Heptathlon. Using the services of all the other IDIOTS present, Ian had to race around the room and answer a series of questions at 5 stations, before collecting or donning another prop until he eventually reached the finish line.

John Granzien (L) presenting Ian his pin.

Under the gaze of the official timekeeper, Ian created a new world record beating the time set for this particular event in Bendigo in 2016 by Kathy Northcott. He was presented the Gold medal along with his IDIOTS pin and in the process becoming the fifth Queensland IDIOTS member. Ian's acceptance speech was exactly what we anticipated, very understated but definitely from the heart. A very deserving inductee indeed.

PROFILE OF A MEMBER

Name: Sylvain Momo

Position: Graduate Chemical Engineer

Employer & Location: Currently Job Hunting – Ideal project engineer within a consulting firm.

How long have you worked in the water industry and what attracted you to it? 2 months. Worked as a project coordinator for a water bore drilling initiative in Cameroon from December 2016 – February 2017.

What do you enjoy most about your job?
Making an impact in peoples lives. Having lost my father to a waterborne disease, it is my goal to prevent that from happening to another child.

What are the major challenges in your current role?
Reducing down-time through better planning and anticipating passible down-time causes before they occur.

How long have you been a WIOA member? 6 months.

How do you relax? Entertain my newborn. And working out.

Where do you live and what's the best thing about it?
Williams Landing , Victoria. It is amazing to watch new houses being built every month or two. The view is always changing.

Quick questions

Age: 27
Family Status: Married
Pets: None
Favourite food: Chicken
Least favourite food: Seafood
Favourite TV show: The Voice
Worst TV show: None, I like most of them
Favourite Movie: Secretariat
Favourite Musical artist/s: Looper
Favourite book: The art of war
Favourite team: Soccer – Liverpool, AFL - Geelong
Ambition in life: Engineering manager on a $1 billon water infrastructure project in AFRICA
Hobbies: Soccer,
Best Trait: Tenacity
Worst Trait: work overload
Four people to invite to dinner: mum, 3 brothers

All the IDIOTS in Queensland.

FIRST WASTEWATER OPERATORS CERTIFIED

WIOA is extremely proud to have awarded certified status to the first six wastewater operators at a presentation ceremony held at the Queensland conference in June. The operators were certified against the Queensland Sewage Treatment Plant Operator Certification Framework, endorsed, by the Queensland Water Skills Partnership Industry Leaders Group.

Since the award ceremony, the new national *Certification Framework 2017 - Operators within Wastewater and Recycled Water Treatment Systems* has been endorsed officially replacing the Queensland Framework. As all 6 operators met the new Framework requirements, they have been reissued with certification under the national scheme.

In 2016, a Framework implementation trial commenced through a partnership between ***qldwater***, WIOA, Skills Tech as the training provider and 5 Queensland water service suppliers: Gold Coast Water & Waste, Queensland Urban Utilities, Unity Water, Logan City Council and Redlands City Council. Apart from the 6 operators certified, there are another 10 operators participating in the trial and they will be awarded their credentials as soon as they complete the necessary training.

In presenting the certification credentials, WIOA MD George Wall quoted some really important points from the Framework itself including, "put simply, the STP Operator certification framework seeks to set minimum standards for training, education and professional development for various industry roles with a view to improving consistency, portability of skills, and access to professional development and career paths for these critical staff. It will help employers manage risks around their environmental duty with greater confidence".

He also noted that the operators are the final, and most important cog in the supply of safe drinking water to our communities along with protecting the environment. Operators should see themselves as protectors of public health and the environment, and should always act accordingly.

WIOA MD George Wall announcing the first Wastewater Operators to be certified under the WIOA scheme.

Attaining Certified Operator status is a real achievement. Any certified operator has demonstrated that they have not only met the training requirements, they have been endorsed by their employer as being competent and experienced.

*Dave Cameron (**qldwater**), Matthew Ball (Unitywater), Amanda Murchison and Stanley McKercher (QUU), Joel Warnes and Brendan Butler (Gold Coast Water & Waste), Michelle Hill (**qldwater**) and George Wall (WIOA) at the first Wastewater Certification ceremony held in Logan.*

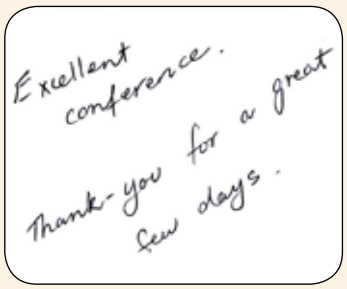
We are convinced they will be the first of many certified wastewater operators in Australia and the certification process will be a driver in the continual protection of public health and the environment in our communities.

Congratulations to the first 6 operators certified under the WIOA Water Industry Operator Certification Scheme including:

- Brendan Butler and Joel Warnes from Gold Coast Water & Waste
- Matthew Ball from Unitywater
- Stanley McKercher, Amanda Murchison and Michael Oakey from Queensland Urban Utilities

QLD CONFERENCE THANKS

Apart from the post conference surveys that WIOA send out to attendees, we only occasionally receive any additional feedback from our conferences. This year in Queensland Glenda Floriduz and Teena Betteridge from the Burdekin Shire Council came up with a novel way of providing feedback. They left a message on the back of their name tags at the venue. Thankfully the catering staff saw the notes and passed them on to us – it made our day!



WASH – A REAL EYE OPENER

As I sit in my nice warm WIOA office with a cup of coffee brewed with water from the tap, preparing to undertake the last class in the International Water Centre Introduction to WASH for Development, I find myself contemplating the Water And Sanitation Hygiene (WASH) needs of the global community.

This is not something I would have ever thought would be on my mind without undertaking the IWC program.

The course at times has been very confronting and challenging, and provided numerous case studies, facts and research findings that I have never considered. With 26 participants from 19 countries across the world, many who are working in developing counties in the WASH sector, the course introduced the core principles for planning, designing and implementing activities to improve sustainable and equitable access to domestic water supply and sanitation facilities and improve hygiene behaviours.

Watching a municipal wastewater worker clearing blockages from the sewer network by duck diving into the drains in the main street of India, demonstrated the divide between rich and poor and the manner in which some people in communities are required to earn an income to enable them to put food on the table for their families.

I was alarmed at the rates of open defecation across the world, especially in developing countries and the data that shows the implications of the health of individuals in these communities.

What is clear is that, somehow, open defecation must be eliminated from the world - this is a huge challenge. A major push is needed to improve sanitation, in order to strengthen the primary barrier against faecally-transmitted infections. A significant start has been made in recent years, but much more effort is needed to facilitate the spread of toilets, to develop the habit of toilet use and to ensure that the necessary service functions effectively to maintain those toilets and the sanitation system of which they are part.

Likewise, the habit of handwashing with soap must be strongly promoted in health facilities, schools and above all in households, by everybody. Handwashing, in turn, requires a reliable water supply.

We must concentrate on all aspects of WASH:

- a reliable, safe, sufficient, accessible and affordable water supply,
- a safe, effective, accessible, hygienic and affordable toilet,
- appropriate hygiene practices, for everybody, everywhere, always.

My challenge now is how do I, or WIOA, make a difference and what role can we play in reaching the Global Sustainable Development Goals?

Craig Mathisen – WIOA Chief Operations Officer

An Indian Wastewater Worker entering the sewer.

4 IN A ROW FOR QUEENSLANDERS

The Ixom Water of Origin Taste Test was held at the WIOA Queensland Conference in Logan. The sample from Toowoomba Regional Council's Mt Kynoch Water Treatment Plant represented Queensland. It was up against Icon Water's Mount Stromlo WTP in Canberra representing NSW/ACT.

For the 4th time in a row, the panel of judges awarded bragging rights to the Queenslanders over the NSW/ACT.

John Mills, water operations manager at Toowoomba Regional Council, said his team celebrated with a tall glass of water. "The June 2017 vintage is a pretty good one. For us it's a balance, because when you have dam and bore water blends, you have to make sure the hardness level doesn't go up too much. A little bit too much hard water makes washing and lathering up soap more difficult." he said.

The Mt Kynoch Water Treatment Plant treats about 25 ML per day in cooler months and up to 53 ML per day in warmer months.

Both samples will now go on to compete against other state winning samples in the Best Tap Water in Australia Competition in October. The winner will go on to represent Australia at the International Water Tasting Competition to be held in the USA in February 2018.

John Mills gives the thumbs up for Toowoomba Water.

Toowoomba Regional Council wins Water of Origin for Queensland (from Left) Harry Coleman, Marcus, Boyd, John Mills & Brett Gogging.

The assembled panel of expert judges during the Water of Origin.

The 2017 WIOA operators tour of New Zealand began in Christchurch and comprised visits to 11 water and wastewater treatment plants over 5 days, followed by attendance at the WIOG annual conference in beautiful Queenstown. Lead by Russell Mack, the group was in safe hands. Expert Kiwi guide and top bloke, John Clemens navigated the backroads and found some innovative ways to get us from A to B. In all 15 representatives from 5 Australian States made it one of the largest groups to date.

Excellent planning saw the group fly into Christchurch from 3 Australian airports, somehow land within around 20 minutes of each other and meet without a hitch in the arrivals lounge of Christchurch International Airport. It was a Friday afternoon, so it was straight to the motel to get checked in before we took a stroll to the CBD to do some sight-seeing. We checked out the ongoing recovery efforts following the earthquakes before dinner and a couple of drinks to get acquainted.

After the breakfast of Kings! (Macca's), the tour was officially under way with the first stop at the Rolleston Wastewater Treatment Plant, about a 30 minute drive from Christchurch. The Rolleston WWTP uses a 5 stage Bardenpho process. There was a lot happening at this plant after being recently upgraded with some interesting processes that intrigued many of the attendees. Of note were the sealed inlet works with odour scrubbing via a biofilter, sludge digestion, dewatering (centrifuge), and an impressively sized glass house for solar drying of sludge. The recycled water is irrigated to a 450 Ha site after UV disinfection.

Rolleston solids drying process.

We headed south and after gazing at the amazing scenery and white-blue waters running off the alps down the numerous rivers crossed, we stopped for lunch. Tour leader Russell advised the group we needed to think of a name for the tour and the think tank began. Unbeknown to the group, an important component of this challenge was to be sourced from the drive to the Timaru Milli Screening Plant. John took one of his many diversions from the main causeway to show the group where Phar Lap was born. The properties surrounding the great nags birthplace adorned themselves with names such as "Phar King", "Phar Out", "Phar Away" or "Phar Kinlost" to name a few.

Next stop was Timaru WWTP which had two distinct waste streams and treatment processes. One for treating a heavy industrial load from Timaru and another for treating domestic loads from Timaru and several other towns some up to 30 km away. The Industrial stream was treated via screening through 0.75mm "milli-screens" while the domestic stream is processed via oxidation ponds. Both waste streams are then blended before being discharged to the ocean approximately 4km from the plant outlet.

On the way to Oamaru for the night, John had one more surprise up his sleeve. About 20m off the highway on a corner with a T intersection was the Peireora water supply treatment plant. Hardly bigger than an average bathroom, it produced water for a small community about 20km from Timaru. Membrane filtration with UV and chlorine Gas disinfection supplied 4 header tanks with up to 4L/sec.

Peireora treatment.

Day three started after a nice buffet brekky, and we rugged up and headed off to Oamaru WTP. We arrived on site in a sleet of rain and a fogged up bus but managed to get to the site and get inside. Oamaru WTP is a membrane plant that is around 10 years old. One of the most interesting things was the raw water supply, which was fed from a river via an irrigation race some 15Km away, then pumped up to the WTP site where it was held in a settling pond /off river raw water storage.

Oamaru WTP.

Being Sunday, there was a little time set aside for some quiet exploring the historic part of Oamaru Township. Some amazing things to see. We then extended our Sunday tour to the Moeraki Boulders where we had lunch and enjoyed a walk on Koekohe beach to go photo mad on the round boulders.

It wasn't all beer and skittles from there, John had a Sunday afternoon surprise. Waikouaiti WTP is another Membrane plant with a fair history behind it. Historically the sole supply to a mental institute pumping from a creek via a header tank dosed with chlorine it was upgraded to a membrane filtration plant in 2008. Producing up to 1.4ML/day now it services numerous small communities to the north of Dunedin.

We arrived in Dunedin for the night, and as the sky grew grey, John pulled up at Baldwin Street. Baldwin street claims the steepest street in the world so the challenge was set to trek to the top. Around half the group made the journey, working up a solid hunger and thirst for Day 3 Dinner at Speights Brewery.

Day 4 and off to Mount Grand WTP for our first stop. A 22ML/d plant also with a lot going on including a supply via 60Km from remote alpine weir through steep and gorge type terrain. Dual pipes for some of the way, one gorge crossing is a critical weak point.

Treatment Processes include coag/flocc, Dissolved Air Flotation (DAF), Rapid sand dual media filtration and chlorine plus UV disinfection. There were numerous options on how each part of the process could be managed and where chemicals could be dosed. This would be a challenging plant for a new operator to understand all the options and contingencies.

"THE PHAR KING EWE TURN TOUR"

Subway lunch (foot long "bro") on the way to Balclutha WTP on the Clutha River. A smaller plant hidden in a small industrial area, which took a few "ewe" turns to find. A completely manual plant with no PLC control nor automatic start or stop functionality combined with little storage capacity meant the operator had to be on his toes. Drawing water from the river the plant had coagulation and clarification (upflow) followed by an interesting technology that most of us hadn't seen, Automatic-Valveless-Gravity Filters (AVG's). These clever filters utilise hydraulics only to automatically reverse flow without the use of valving.

From there it was a scenic drive to the east towards more alpine terrain. John had yet another trick up his sleeve, taking us off the beaten track once more we arrived at a river with not much hope. There was a couple of cables across and a platform bolted to two motor-less boats. He decided to take a shortcut (not a "ewe" turn) to Alexandra via the Tuapeka Mouth Ferry. The punt crosses the Clutha river and is the only one of its kind in the Southern Hemisphere that uses the river flow to get from one side to the other. Two classic kiwis operate it, one with all the PPE and one without. Low river levels meant the angle of the exit off the ferry proved a classic moment of the trip as neither vehicle escaped damage. Cool Kiwi John said no problem "bro", I will fix that later.

The Tuapeka Mouth Ferry crossing.

Laughter subsided as we ventured on to Alexandra (time for a "ewe" turn John). That night whilst dining, extensive collaboration and brainstorming, the official tour name was decided by unanimous vote.

The tourists and the tour name.

Day 5 we awoke to a frost and around minus 2 degrees. It was time to see how waste was treated in the hottest, coldest, driest place in New Zealand. Those who had them wore gloves, those who didn't suffered. The Alexandra sewerage system comprises 7 pump stations all pumping to one main PS. Recent upgrade installed a new balance tank to help even out peak flows, activated sludge process. Sludge is dewatered via centrifuge. Treated water is disinfected with UV before discharge to the river.

By the end of the tour the sun had almost got into the gorge-like valley the plant was in, and the ice was starting to slowly melt. It was back to Alexandra for morning tea and a hot cuppa before the drive to Queenstown for the conference the following day.

Alexandra WWTP.

The tour bus was a bit quieter now, as everyone enjoyed the majestic valleys and somehow Lord of the Rings style scenery that graced the bus. But there was some energy in the air, with a quick stop off to all get perilously close to the edge of a very deep unfenced gorge, the talk returned to prospects and opportunities that lay ahead. The bungy jump? The Shotover jet? What would become of Tim and his wish to go to the library?

Four tourers took on the bungy, Travis (North East Water), Will (South Gippsland Water), Sambo (The over 40's), Steve (Gippsland Water). From Bungy jumping, more scenic tour style driving from John got us to Queenstown, where we promptly drove straight past our hotel and continued to Shotover. Here we gathered a group of 10 and took on the thrills of jetboating NZ style. A fantastic finish to the official treatment plant tours.

Time to hit the hotel and get ready for WIOG's fantastic Presidents Dinner to kick off the conference. The group was bonding now and really getting on, everyone looking forward to the conference.

The WIOG conference was well attended and was themed 'Wellness in Operations'. Key note speaker Dr Kirsty McCulloch from Adelaide presented on fatigue management and its contribution to failures in system performance, whilst learning to manage fatigue in the modern "24/7" environment.

Both operators and technical presenters alike did very well and the format was great. Good to see the interesting initiatives being discussed and innovations in development.

The trade show had a few familiar faces. The Australian contingent formed a couple of teams to compete in the trade show challenge with the 'Fat Badgers' (Ben (GCCC), Tim (Wannon), Steve & Ben (Gippsland) taking out the title! The booty however, was too big to transport home so an auction was held with proceeds going to WIOG's welfare fund. Marcus Boyd from Toowoomba took the auctioneers hammer and managed to sell the winnings for well above market value. A great finish to the conference and the trip as a whole.

Thanks to WIOA for their effort in planning and organising the trip, it was amazing, thanks to WIOG and John, our tour guide for being so accepting and patient and giving people on both sides of the bus the opportunity to see things with all the Phar King Ewe Turns!. Also, thanks to all the operators, in particular those who offered their time for weekend site visits. They were all very accommodating and knowledgeable, happy to share their time and experience.

Contributed by Mark Samblebe & Jill Busch

BIRDS EYE VIEW - Facilities Members Operate

Veolia Operations - Hunter Water Contract

Grahamstown Water Treatment Plant, Tomago

Plant Features

1 Raw Water Tank. 9ML of Grahamstown Dam Water (from Williams River) or less frequently Water from Tomago Sandbeds

2 Stage 1 Clarifiers from Raw Water with Alum and Poly Dosing

3 Stage 2 Sedementation Tanks from Raw Water with Alum and Poly

4 Alum Chemical Storage

5 Stage 1 Filters

6 Stage 2 Filters

7 Backwash Tank (Stage 2)

8 Fluoride Chemical Storage

9 Wash Water Tower

10 Chlorine Dosing and Storage

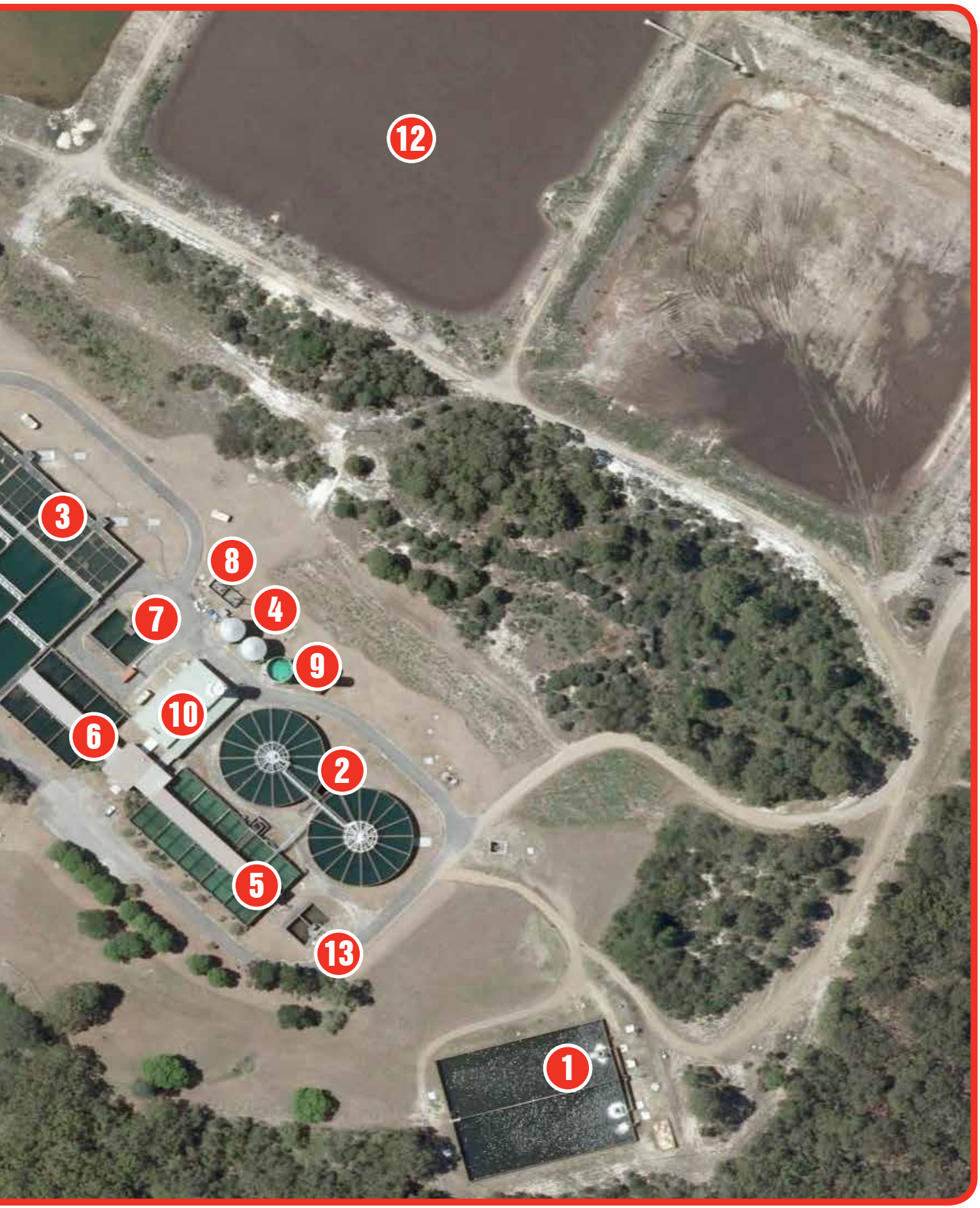
11 Chlorine Contact Tank or Clear Water Tank. From here the water is pumped from Tomago Pump Station to town resovoirs

12 Sludge Lagoons (3 in total)

13 Backwash Tank (Stage 1)

Plant Supply Capacity

266ML per day for a population of over 370,000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TWO IN A ROW FOR TAPPING TUBBIES

Six teams went head to head in the Mains Tapping Competition, held for the first time at this years WIOA Queensland Conference. The City of Gold Coast team, "Tapping Tubbies" (Trent Roberts and Spencer Stacey) finished ahead of teams from Queensland Urban Utilities, Logan City and Redland City Councils.

The winning time of 1 minute and 47 seconds was marginally ahead of the time the Tubbies posted to win the inaugural competition hosted by ***qldwater*** in 2016. That's right - they are officially the team to beat. They were also quick to perform their now trade marked "belly crash" after posting the best time.

While mains for new developments these days typically come with fittings for property services pre-installed, live tapping still has a place in brownfield areas. When rigged up above ground with an enthusiastic crowd cheering on, there is plenty of action and this year in particular there was plenty of water for the crowd to dodge.

Thanks to Reece Civil as the equipment sponsor along with Ixom who provided the trophy as well as $1,000 donation to the winners nominated charity. The Tapping Tubbies chose the Animal Welfare League's shelter at Coombabah as the recipient.

Thanks to the Logan City Council (in particular Brad Milfull) and City of Gold Coast (Kent Weeden, Alan Batchelor and Ben Pennell) for their huge efforts in sourcing the water supply and setting up the pipework and facilities used as part of the mains tapping competition.

WIOA will be bringing the concept to the Victorian conference to be held in Bendigo in September again with Reece Civil and Coliban Water helping out as sponsors. Make sure you get a team in, or alternatively check out all the action first hand if you happen to be at the conference.

The Tapping Tubbies (Spencer (L) and Trent) from Gold Coast with the spoils of victory.

The teams from QUU and Redlands battling it out.

Hurry up and turn the tap off.

A large crowd watching proceedings.

CHARITY DONATION

Part of the prize for winning the Queensland Mains Tapping Competition was the opportunity for the winning team to donate $1000, courtesy of sponsor Ixom, to the charity of their choice. The winning team from the City of Gold Coast, the "Tapping Tubbies" consisting of Trent Roberts and Spencer Stacey chose the Animal Welfare League of Queensland's shelter at Coombabah as the recipient.

Trent and Glyn Parry from Ixom present the cheque to Neil Rangeley from AWLQ.

INTEREST DAY AT YAMBA

Just over 30 attendees assembled for the Wastewater Interest Day held in May at the Clarence Valley Council Depot in Maclean.

After a quick cuppa and some introductions, Andrew Potter from Clarence Valley Council commenced proceedings with a presentation and a video tour outlining the update of the Yamba Sewage Treatment Plant. He covered the history of the site, the works undertaken including the design and installation of the new decant weirs, the sludge dewatering plant and the new outfall pipeline.

Andrew Potter showing off the sludge dewatering plant.

Thomas Lees from Ballina Shire Council spoke about the development of the Urban Water Strategy including the Ballina-Lennox Head Recycled Water Master Plan. The scheme includes the upgrade of the wastewater treatment plants and the supply of recycled water to 7200 homes in the region through a dual reticulation network. He described the stakeholder engagement and regulatory approval processes which are crucial in delivering such an innovative project.

Murray Thompson did an excellent refresher on backflow prevention and cross connection control awareness using a theme of "protecting water quality in the water supply distribution system". Some of Murray's photos really highlighted what can go wrong if this is not managed properly.

As main sponsor for the day, Peter Ebenwaldner from AWMA outlined how they worked with the Clarence Valley Council team to develop a really innovative solution for the decant gates at the Yamba WWTP. Peter described in detail the root cause analysis that AWMA had done on gates that had failed at other sites and also the contributing factors. In coming up with the new design, AWMA eliminated the spindle and drive nuts in favour of a positive drive cable system using a single actuator for each gate. The gate actuation system was fully tested before installation with the gates synchronised post installation. He also talked about some of the other applications where AWMA has successfully installed their equipment.

The Yamba WWTP decant gates in operation.

Bruce Young did a great talk on Kempsey Shire Council's process for the management of biosolids and their reuse on a local farm. He was able to describe in detail how they had set up their very successful reuse process with a range of great photos.

George Wall did an update on WIOA activities and talked about operator certification, in particular how it related to wastewater treatment operators.

After our Subway lunch we headed to the Yamba WWTP for a tour of the plant to see all the new infrastructure described during the technical sessions in action. It was good to see the decant weirs as well as the sludge dewatering system in operation.

The feedback from the operators who attended the day was great and we look forward to the next event in NSW.

Aerial view of the Yamba STP.

The Clarence Valley operators.

Bruce Young from Kempsey presenting.

VICTORIAN INTEREST DAY IN BALLARAT

Central Highlands Water (CHW) was the host for the recent Victorian Wastewater Interest day conducted in Ballarat to look at the recent upgrades to the Ballarat South WWTP. The first part of the day was held at the CHW head office with presentations by the plant operators and engineering team, followed by lunch and a site tour of the recently completed works.

First up was Chris Orchard who explained the history of the plant from its original construction and upgrades between 1926 until today. The old photos in Chris's presentation show just how much has been done, not only at the site but the area surrounding the plant as well. With all of our technology it's amazing that some of these old style treatment methods are still up to the rigours of today.

Next up was Fawzi Saldin who explained the intricacies and the recent improvements to three of the four sludge digesters to maintain them in working condition. The recent addition of mechanical mixers has improved the sludge mixing and gas output. The final digester is being converted from a floating to a fixed lid and will also have a mixing system installed.

Raman from Sulzer Pumps presenting in Ballarat.

Jeremy Radford took us through the construction of the new clarifier and some of the issues that arose as it was being built. Ballarat is well known for its gold mining and issues with abandoned mines continue to be a problem when any works are undertaken at the plant today. The clarifier project was no exception with piles needed for stabilisation and some mine shafts needing to be filled in as well.

Jeremy continued with a presentation on the upgrade to the blowers and the benefits not only to the plant, but the operators as well. The new blowers are exceptionally quiet and they have made it a better place for all to work with the noise reduction as well as providing plenty of air for the treatment process.

The final presentation was a very informative session conducted by Raman Saroya from Sulzer. Raman took us through the principles of blowers and compressors discussing the differences between them and their application in a plant. It was interesting to see the wide range of blower types, their operating ranges and application.

Chris Orchard from CHW leads the tour of the Ballarat South WWTP.

With the presentations over we all made our way to the plant, without getting lost, for a BBQ lunch. The plant tours were conducted by Chris Reus and Chris Orchard and provided plenty of opportunity for one on one discussions on any part of the plant and its operation.

It was a very interesting and well conducted day and a credit to the CHW staff, in particular David Reyne for putting together the program and organising the venue, the CHW team of Chris, Fawzi and Jeremy along with Raman and Sulzer for supporting the day, and providing the BBQ lunch.

Contributed by Anthony Evans from Wannon Water

INNOVATIVE USE OF INFRASTRUCTURE AT LUGGAGE POINT

Achieving the guidelines as stipulated by the Department of Environment and Heritage Protection (EHP) in a discharge licence is the top priority at any wastewater treatment plant in Queensland. Maintaining a compliant treatment plant becomes more difficult as communities grow and influent rates increase. Inevitably a treatment plant will reach its process capacity volume and will need to adapt to meet the increase in demand. The Luggage Point Sewage Treatment Plant (STP) has hit this point; to maintain its discharge licence an innovate re-use of existing infrastructure has been used control ammonia loading.

The Luggage Point STP dewaters approximately 1.44 ML/d of anaerobic sludge using two centrifugal decanters. The fluid removed in this process is known as centrate; the centrate has a very high concentrate of ammonia. The centrate re-enters the treatment process at the inlet as a side stream waste and accounts for 15% of ammonia loading in the biological nutrient removal (BNR) process. To reduce the impact of the ammonia rich side stream waste, the operational team identified a solution which utilises an old drying bed drainage channel to store the waste during peak demand and installed modifications which allows the waste to slowly feed into the process during the night. The centrate's impact is further reduced by running the fluid through a rehabilitated drying bed which polishes out solids that are not captured in the de-watering process.

As a result, the plant has increased its capacity to remove nitrogen from the effluent by spreading the load more evenly throughout a 24 hour period. Additionally, savings have been identified in aeration costs as oxygen demand in the nitrification process has been reduced during the day. With the global escalation of urbanisation many treatment plants will be required to adapt their process to meet the demands of increased flowrates. Modifying existing infrastructure can be a successful provisional solution to help maintain a discharge licence while waiting for major upgrades or large improvement projects.

Contributed by Gary Fenwick *from Queensland Urban Utilities*

SOUTH AUSTRALIAN INTEREST DAY & TASTE TEST

On 13 July, almost 40 water industry representatives participated in the third WIOA SA Interest Day & Taste Test. Sponsored by Ixom, the event was held at the Tonsley TAFE campus.

Bob Arnold provided an overview of Ixom's latest engineered compact chemical storage and dosing 'Bullet' systems. The new array of products demonstrates the changing requirements of commercial customers and the company's focus on delivering customer service excellence.

Winner of the 2016 SA Operator of the Year award, Daniel Partridge from SA Water reported on his experiences from attending the WIOA Study Tour of water and wastewater infrastructure (and tourist sites!) in New Zealand earlier this year. Thought provoking, yet humorous, Daniel demonstrated that the variability in asset condition and operational challenges within water and wastewater treatment knows no boundaries, even across the Tasman Sea. Well done to Daniel for his enthusiasm and passion to make a positive contribution to the SA water industry.

The keynote speaker was Alister Laidlaw from North East Water in Victoria. Alister gave a down-to-earth view of some of the applications of drones in the water industry, particularly for undertaking asset inspections, for example at water storage facilities and reservoirs. He also touched on the regulations and training of "pilots". Drones are here to stay and will continue to improve work, health and safety of traditionally high risk activities. A live demonstration of Alister's 'pet drone' during the event lunch break was welcomed by all!

The attendees photographed by the drone.

Graeme from Maric gets a close up look at the drone.

Challenges around the planning of water main shutdowns associated with the Darlington Upgrade Project in Adelaide's south was presented by James Thonder from Allwater. With a number of large water mains needing to be moved, the presentation reinforced the importance of innovative thinking to ensure water supply service continuity during complex construction, along with the proactive management of water quality contamination and the disinfection of new mains.

The production of safe drinking water requires not only the right infrastructure and control systems, but supporting quality management system platform and associated documentation. Kalan Braun presented on Trility's journey to creating operator friendly and, most importantly, usable drinking water quality management plans.

Many water operations personnel in SA would be well aware of the 2016/17 River Murray Blackwater event. Emma Sawade and Greg Dworak from SA Water provided a comprehensive review of SA Water's response, including treatment plant and network management strategies to minimise the impact on health and aesthetics of drinking water supplied to customers and the community. The importance of multi-disciplinary teams and communication among SA Water staff and its contract partners (Allwater, Trility) was emphasised. Overall, the water quality impact, especially in vulnerable chloraminated supplies was significantly less than experienced during the 2012 Blackwater event.

Finally, Lorraine Bulbeck from the Australian Water Quality Centre provided a "noses-on" overview of the science of drinking water aesthetics, including taste and odour. The key message was that taste and odour are uniquely individual, with our favourite water often being that which we drink most often.

This was the perfect lead-in to the heats of the SA Taste Test! With samples submitted from 19 different water treatment plants across the state, all attendees happily participated in the heats. Congratulations to the operations staff at Morgan Water Treatment Plant for winning the competition two years in a row!

Max Gray from Trility doing the entry paper work for the taste test.

The taste test Grand Final Judges - Daniel Partridge, Lena Marcheson, Alistair Laidlaw and Bob Arnold.

Many thanks to WIOA but especially to SA Water, Allwater and Trility, for promoting and making available core operations staff to participate in the Interest Day. The organising committee, under Chairman Robran Cock from Trility created a diverse and engaging program centred on water operations.

The Morgan team wins the 2017 Ixom South Australia Water Taste Test.

***Contributed by Con Pelekani**, SA Water.*

INTEREST DAY AT MT CROSBY

Fantastic!

That's the one word I would choose to sum up the Water Interest Day we attended at Mt Crosby. The first thing that struck me as different as I first pulled into the site was the magnitude and pleasant aroma from the plant. As any experienced Sewage Treatment Plant operations professional, I expect my infrastructure to have a certain accompanying odour, in contrast Water Treatment Plants smell almost floral.

Attendees at the interest day at the Mt Crosby WTP.

The day started with casual socialisations and catching up with acquaintances over a cuppa before moving into a range of talks delivered from a varied range of presenters. Matthew McNamara from Seqwater and Richard Dagwell from Wood Group gave a very engaging talk on the organisational structures and maintenance partnerships in place at Seqwater that provided a unique perspective on the resultant change management that has occurred in the business.

Project manager Alan Lush delivered a high level reflection on some recently completed upgrade of the bulk chemical storages and commissioning of the centrifuge upgrade project This was followed by Thermo Fisher Scientifics very own gun specialist Vanessa Paterson who delivered a talk on measuring turbidity and suspended solids.

It was during Vanessa's scholarly talk that I learnt a new word "Nephelometry". I may have been the only operator in the room that day who didn't know what Nephelometry is, but I now know it is a method for determining the amount of turbidity in water based upon the transmission and scattering of light.

Vanessa from Thermo Fisher Scientific presents on colour and turbidity.

After a quick WIOA update from Craig we took off to the plant tour which was definitely a highlight. The raw water intake well, treatment infrastructure and labyrinth of underground tunnels and pipework took me back to the feeling of excitement and wonder I had when I first became an operator almost 20 years ago.

Mt Crosby raw water drywell.

The feedback from the operators I attended with on the day was a mix of interest, enthusiasm and appreciation. On behalf of professional water operators everywhere, I'd just like to personally thank WIOA and Seqwater for the invite and such a great day out.

Mt Crosby tour under way.

***Contributed by Jason Lee** from Queensland Urban Utilities*

CONGRATULATIONS

Ben Metman and Jennie Björk were married recently in Sweden, now making Control Components a complete family business!

TASMANIAN OPERATIONS INTEREST DAY AND TASTE TEST

The Ixom Tasmanian Water Taste Test was held at the Mowbray Racing Centre Launceston in conjunction with a Water Interest Day organised by the WIOA Tasmanian Advisory Committee. With a good mix of TasWater employees and suppliers making up the majority of attendees it was a very pleasant and informative day.

Darren Lord (Chair, WIOA Tasmanian Advisory Committee) kicked off the day welcoming everyone along. Bill Holdsworth from Ixom did a presentation on Chlorination.

The Keynote speaker was Dean Barnett (Western Water) talking about the Intelligent Water Network and the scope of projects they are working on for water and wastewater applications. This is a very sensible way for water utilities to collaborate and do some great research as well.

After morning tea, the 2016 Tasmanian Young Operator of the Year, Patrick Cotton, gave a report on his trip to New Zealand. Clearly a very good time had by all. Royce Aldred and Bill Wood gave an insight into Lagoon sludge right across Tasmania including how it is measured, how much do we have and what are we doing from here to remove it.

Lorraine Bullbeck from the Australian Water Quality Centre gave a talk and demonstration on Taste and Odour compounds in water which proved very timely, right before the taste test competition heats.

The operators doing the odour test.

Tony Hourigan from Hydamet introduced a new addition to their brand Hydramix in reservoir mixing. Hydramet now also have a full time service operator in the state, plus an office situated at Western Junction Airport. Sophie Rowlands (Taswater) talked about Water quality, and what the customers think. Finally, Fran Smith (Taswater) gave a briefing on the statewide wastewater drug sampling program.

But the day belonged to the taste testing. Competition was fierce. The bar had been raised by last year's winner Barrington, which won Australia's best drop and then went on to represent Australia in the International taste test in the USA.

Phil Tuck breaking the dead heat on table 2.

After the first round of testing was complete it was down to the final four with one big surprise with last year's winner not making the cut. The four finalists were Forth, White Hills, Bryn Estyn and Fenton-New Norfolk.

The Grand Final Judges.

While the Grand Final sampling was taking place, the tension was running high in the room.

It was like a cross between the Academy awards and the Brownlow medal count.

The day belonged to Fenton - New Norfolk which came out on top, meaning that for the first time, bragging rights and honours had gone to the south of the State.

Some of the winning team from Fenton - New Norfolk.

Contributed by Phil Tuck, *Taswater*

About the Lake Fenton Supply

- Lake Fenton is in the Mount Field National Park, approx. 90km West of Hobart
- It's catchment is pristine wilderness and includes seasonal snow melt.
- From the lake, the drinking water supply runs along natural streams to a weir at Lady Baron Creek above National Park
- From this weir the water is collected by TasWater in a pipe, known as the Fenton pipeline, installed in the 1930's.
- This was built to supplement Hobart's water supply which until this time was sourced solely from Mount Wellington
- Water from Lake Fenton is chlorinated at National Park and distributed to several of Hobart's suburbs as well as being stored in dams at Waterworks Reserve.
- The Water Services Team conducts a scheduled water sampling regime, routine maintenance activities on the chlorination systems and pipeline.
- The flow of water can be controlled remotely via radio telemetry and a SCADA system and is monitored 24/7.
- Water is re-chlorinated along its path to Hobart.
- At times of heavy rain, organic material and sediment picked up by runoff in the Lake Fenton catchment and collected as the water travels along the natural stream to the weir can potentially becoming turbid, or discoloured. When this happens, TasWater stops using the turbid water from Lake Fenton in the Hobart area and may substitute it with water from the Bryn Estyn Water Treatment Plant or via Waterworks dams.
- Hobart receives on average 20 million litres per day or approx. 15% of Hobart's water requirements.

Lake Fenton.

EL NIÑO EVENT FREQUENCY TO INCREASE

The frequency of extreme El Niño events is projected to increase for a further century after global mean temperature is stabilised at 1.5°C above pre-industrial levels.

Research published in Nature Climate Change by an international team shows that if warming was halted to the aspirational 1.5°C target from the Paris Agreement, the frequency of extreme El Niño events could continue to increase, due to a continuation of faster warming in the eastern equatorial Pacific.

CSIRO researcher and lead author Dr Guojian Wang said the growing risk of extreme El Niño events did not stabilise in a stabilised climate. "Currently the risk of extreme El Niño events is around five events per 100 years," Dr Wang said.

"This doubles to approximately 10 events per 100 years by 2050, when our modelled emissions scenario (RCP 2.6) reaches a peak of 1.5°C warming. "After this, as faster warming in the eastern equatorial Pacific persists, the risk of extreme El Niño continues upwards to about 14 events per 100 years by 2150. This result is unexpected and shows that future generations will experience greater climate risks associated with extreme El Niño events than seen at 1.5°C warming."

The research was based on five climate models that provided future scenarios past the year 2100. The models were run using the Intergovernmental Panel on Climate Change's lowest emissions scenario (RCP2.6), which requires negative emissions late in the century.

Director of the Centre for Southern Hemisphere Oceans Research and report co-author, Dr Wenju Cai, said that this research continues important work on the impacts of climate change on the El Niño-Southern Oscillation which is a significant driver of global climate.

"Extreme El Niño events occur when the usual El Niño Pacific rainfall centre is pushed eastward toward South America, sometimes up to 16,000 kilometres, causing massive changes in the climate. The further east the centre moves, the more extreme the El Niño.

"This pulls rainfall away from Australia bringing conditions that have commonly resulted in intense droughts across the nation. During such events, other countries like India, Ecuador, and China have experienced extreme events with serious socio-economic consequences."

Dr Cai added that while previous research suggested that extreme La Niña events would double under a 4.5°C warming scenario, results here indicated that under a scenario of climate stabilisation (i.e. 1.5°C warming) there was little or no change to these La Niña events.

The research was conducted by researchers at the Hobart based Centre for Southern Hemisphere Oceans Research, an international collaboration between CSIRO, Qingdao National Laboratory for Marine Science and Technology, the University of New South Wales, and the University of Tasmania. The National Environmental Science Programme's Earth System and Climate Change Hub co-funded this research.

Originally published as a media release via CSIRO news - www.csiro.au/en/News/News-releases

BOM NEWS

Australian Government
Bureau of Meteorology

The Bureau of Meteorology recently released the final instalment of the National Water Account 2016.

Accounting for water around Australia

Following extensive analysis, the final region of the Bureau of Meteorology's National Water Account 2016, the Murray-Darling Basin report is now available, along with a national overview and video summarising the 2015-16 account.

The National Water Account gives detailed insight into Australia's water situation for the previous financial year, across ten nationally significant water-use regions.

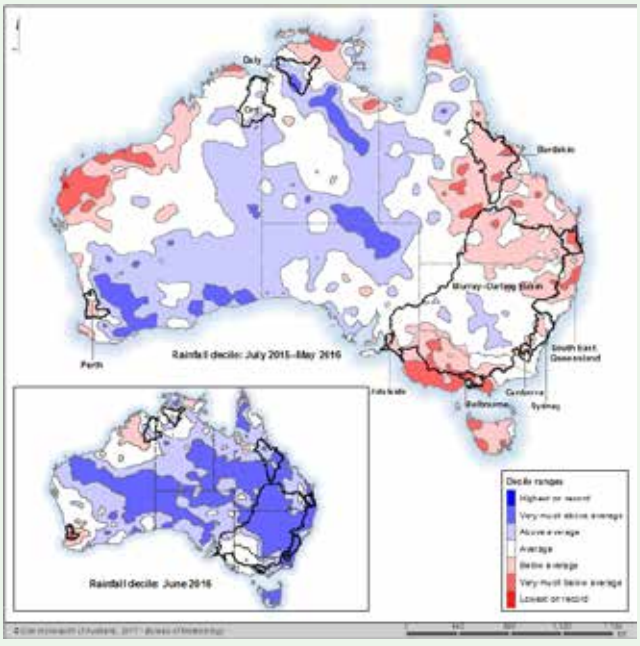
Key national findings for 2015–16:

- Below-average annual rainfall was observed across most of Australia, influenced by strong El Niño conditions.
- Due to the dry conditions inflows into storages were less than previous years in many regions across the country. This was particularly so in the urban regions of Perth, Adelaide and Melbourne.
- Sydney and Canberra water storage levels increased above the previous year due to rainfall associated with an East Coast Low in early June 2016.
- Total water allocated was 17,542,600 ML. Of that allocation, 63 per cent was taken from our waterways and storages.
- Total water sourced across the regions was 12,850,400 ML. This was less than the previous year due to the dry conditions.
- Among the ten regions, 70 per cent of water was used in the Murray–Darling Basin, mostly for agriculture purposes. Urban regions used about 18 per cent and about 1,285,000 ML of water was released for environmental purposes.

The Bureau works with many collaborators to develop the account, gathering and analysing data from organisations across the water industry, and presenting it in a national context.

More about Australia's water availability and use in 2015-16 is on the BOM website at www.bom.gov.au/water/nwa

The national overview video is located at https://youtu.be/DqVM6YaTzOk



PET RESERVOIR – EMERGENCY SYPHON LINES & SPILLWAY REPAIRS

June 4-5 2016 saw record rainfall across the North and North West of Tasmania. As a result, significant flooding occurred, the likes of which had not been seen for over 50 years.

The Pet Reservoir, a 75 hectare dam that supplies water to Taswater's water treatment plant for Burnie and surrounding towns, experienced significant rainfall. The dam's downstream spillway, which is lined with concrete panels, was significantly damaged as a result of the amount and velocity of the water flowing over the spillway.

Spillway running full bore.

Spillway damage.

On Monday 6 June, Irrigation Tasmania was asked to investigate how we could quickly lower the water level in the dam to below the level of the damaged spillway in case of more rainfall. It was determined that the installtion of syphon lines over the dam wall to discharge the water would be the best option.

On Tuesday 7 June, in conjunction with Taswater field staff and engineers, and subject to pipe availabilty, it was determined that 2 x 500mm poly pipelines were required for the syphon system. Whislt all the theory was there on the syphon lines, neither Irrigation Tasmania and Taswater had installed a syphon system of this size and length before.

The pipe was delivered to site on Wednesday 8 June, unloaded and welding of 2 x 500mm syphon lines, both 150 metres in length began. Two 500mm gate valves and fittings were procured and flown in from suppliers, to ensure the system could be installed in the shortest possible time.

From 9-14 June, the installation of the pipe lines, valves, anchor blocks and primimg system was undertaken. Gate valves were used on the downstream end and non return valves were installed on the ends under the water. Priming was by way of diesel pump to fill each line completely with water. Both Irrigation Tasmania and Taswater staff worked through the weekend to make sure the project was completed as soon as it could be.

On Wednesday 15 June, the first syphon line was commissioned and made operational with complete success. The following day, the second siphon line was commissioned and made operational, again with complete success.

Siphon lines flowing at discharge end.

The overall result was that each syphon line delivering a flow rate of 600 L/s, (1200 L/s in total), enabled the dam level to be reduced significantly within a few days to enable the repairs to be made to the damaged spillway.

Excavating to repair the damaged spillway.

Repaired spillway.

Damage included 5 concrete floor panels and 7 right hand wall panels of the spillway chute failed. Also damage to the walls of the still pond by the concrete slabs carried downstream

Repairs required included stabilisation of the remaining wall panels; repairs to the floor and side wall foundations; construction of new spillway floor and walls (approx. 100 m3 concrete); construction of a deflector wall and stilling pond wall repairs

Repairs works undertaken over a period of approx. 7 weeks (June and July 2016).

Contributed by Nigel Searle, *Irrigation Tasmania*

ARE YOUR PUMPS RUNNING TOO SLOW?

As published in Pump Industry magazine and on the Pump Industry website.

In today's environment, with a strong focus on energy-efficiency, engineers are going to great lengths to maximise the efficiency of their projects. They'll insist on high-efficiency motors, improved insulation, VSDs and any components that assist in improving efficiency – but often these efforts are held back by adherence to outdated standard specifications on pump speeds.

It is a consequence of simple physics that for most HVAC pump duties, the hydraulic efficiency is improved by running pumps faster. And so putting an arbitrary limit on the maximum speed often precludes the best selection. For clean liquid service, such as HVAC projects, there is simply no reason to specify a maximum speed.

For today's pump designs, where they are designed to operate at 2-pole speeds, nothing is achieved by insisting on 4-pole pumps if a 2-pole pump will do the duty – because it will usually do the job better. It will be more efficient, more reliable, and have a lower capital cost – and indeed a lower life-cycle cost. And as a bonus, it will usually take up less plantroom space.

Sure, a 2-pole motor may emit more noise than a 4-pole motor – but if noise and vibration are an issue in a design, then specify the limits for noise and vibration. And it is likely that attenuation of the 2-pole noise is simpler than that from a 4-pole motor. For low flow/high head duties, a single-stage 4-pole pump is usually an awful selection, with dismal efficiencies, and operation to the far left of the H-Q curve – which will lead to increased radial loads resulting in low bearing and seal life. For such duties, a 2-pole multistage pump is ideal – with maximum efficiency and minimum footprint.

Ron Astall, a leading Australian pump engineer, who has been training engineers on pumping systems for many years has a pair of papers on this subject which set out these concepts with simple clarity – just click on the links below. Sincere thanks to Ron Astall for permission to use his papers.

www.pumpindustry.com.au/understanding-pump-curves-7-are-your-pumps-running-too-slowly/4564/

www.pumpindustry.com.au/understanding-pump-curves-8-are-your-pumps-running-too-slowly-part-two/4995

For more information contact Daniel Pridham on 1800 678 910 or email Dan directly at dan@qmaxpumping.com.au

Pumps.

HYDRAMET EXPANDS ITS FOOTPRINT IN TASMANIA

The TRILITY GROUP is proud to announce the opening of a new Hydramet office and warehouse facility in Western Junction, Launceston.

The opening of the facility further demonstrates Hydramet and TYILITY'S commitment to the Tasmanian water sector. For the past decade, they have been providing water disinfection and maintenance services. The investment in the region by way of opening this facility and employing local knowledge is essential for future growth in Tasmania.

The TRILITY Group prides itself on the relationships it has fostered over its 20 plus years within the water sector. It is a true testament to how well public and private sectors can work in collaboration to the benefit of the communities in which they serve. Through the facility in Launceston, Hydramet intends to further build local expertise, create employment and utilise local suppliers where possible which will provide some stimulation to the local economy.

For more information contact Tony Hourigan, Business Manager Tasmania on 0429 722 741 or by email at Tony.Hourigan@hydramet.com.au

Jeremy Rockliff MP, Minister for Primary Industries and Water unveiling the plaque.

The new office in Launceston.

Inside the new office.

DRINKING WATER: MICROBIAL MANAGEMENT VS. VERIFICATION

Current methods of microbial detection and monitoring in water treatment and distribution systems typically involve culture-based methods which provide operators the ability to identify certain species. While culture testing is an excellent method to verify the presence of specific culturable microorganisms, there are several challenges associated with such methods that make managing water treatment and distribution systems complex and difficult.

From a water quality management stand-point, the time required (2-5 days) for culture testing can be very problematic when microbial threats are present. Results indicate a problem that has existed uncontrolled for several days and remedial action generally requires an additional site visit and follow up culture tests to confirm the efficacy of the corrective action.

Water quality management involves more than just microbial monitoring. Physical and chemical parameters (pH, turbidity, free chlorine etc.) generally provide results within a few minutes through portable testing meters or on-line instrumentation, allowing users to implement and monitor corrective action on-the-spot. The ability to identify microbial threats within the same timeframe improves water quality management through better control and feedback.

Adenosine triphosphate, the primary energy carrier for all living cells, offers this ability by providing water treatment professionals with a rapid and portable test to quantify the size of the total biological population in any water or wastewater sample. ATP can be quickly extracted from living cells and reacted with a Luciferase-based enzyme to produce light. The amount of light produced is directly proportional to the amount of ATP present in the sample and provides a direct measure of the microbiological content.

ATP measurement and results take less than 5 minutes. Rapid on the spot field measurement provides the ability to manage microbial threats through applying a strategy of assessment, immediate mitigation and confirmation.

Are you in control of microorganisms in your drinking water system? For more information, contact Arthur Kokolekos, Business Development Manager APAC, LuminUltra Technologies on 0434 771 881 or Email: arthurk@luminultra.com

A SHARPER EYE ON SLUDGE LEVELS

The latest sonar technology improves accuracy in level measurement, helping water/wastewater plants sustain compliance and enhance efficiency.

Wastewater treatment plants are major energy users, and efficient operation requires a fine balance between biological and hydraulic parameters.

COMPLEX PICTURE

Even with extensive sample extraction and lab analysis, it is difficult to obtain a clear picture of the sludge density profile: solids densities can range from 200 mg/L at the tank top to 3,000-6,000 mg/L or more at the bottom. Generally, operators are interested in quality return activated sludge with density greater than 2,500 mg/L. However, when problems occur, operators need to know the dynamics of the different layers to effectively control the treatment process. Tools for gaining a full tank profile include manual dipping devices such as tube samplers or gap sensors, but these provide no continuous output for trending and control.

SIGNIFICANT IMPACTS

As the floc layer rises due to an upset, the assumption may be that the denser RAS layer is also rising. This tells operators either to increase the RAS pumping rate or drop the bellmouth to bring the rising blanket down. These actions have little effect on the lighter floc layer, but will quickly remove the good-quality biomass and then begin to pump back a lower-density, poor-quality biomass. All this negatively affects the food-to-microorganism ratio, mixed liquor suspended solids and dissolved oxygen. At some sites, it could take weeks to fully rectify the situation

IMPROVED TECHNOLOGY

Now, advanced sonar systems have been developed that submerge a high-power transducer to send sonar pulses through the liquid. These are reflected back by different density layers, including those in excess of 6,000 mg/L and even the tank floor. Signals are processed to provide outputs that relate to both the floc and RAS levels. Alarm levels can be set to help operators make process changes in time to avert a permit violation.

Advanced sonar measurement devices from Hawk Measurement can provide such accuracy, helping to improve process control, enhance permit compliance consistency, save energy, and extend equipment life.

An ORCA Sonar System is shown in full profile and as mounted to measure sludge levels in a clarifier basin.

***Contributed by Jack Evans**, Hawk Measurement.*
www.hawkmeasure.com

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:

Stephen Walters, David Wickman, William Smith, Shaun Smith, Gary Goodliffe, Chitra Liyanage, Imtiag Ali, Andrew Stevenson, Craig Kelly, Steve Young, Bradley Milful, Kim Roebig, Lester Bridgham, Geoff Loy, Scott Smith, Angus Heares, Darshan Udayaratna, Ben Dresman, Isaac Ryan, Adam Kleier, Erik Bracchi, Gary Cullen, Gary Price, Matthew Kelly, Donald McIntyre, Lance Hill, Linda Williams, Morgan Cartridge, Matt Patrick, Ian Finn, Daniel Partridge, Kim Fisher, Bileen Nel, Adam Nesbitt, Scott Omally, Graeme Kerlin, Trevor Wright, Terry McLaughlin, Brian Whinfield, Matt Pearce, Kirk Ardley, Glen Patterson, Luke Schwencke, Adam Branch, Paul Bachman, Malcolm Greenacre, Anthony Heintze, Mark Caon, Sarah Elmes, Bradley Nauman, Greg Higgins, Michael Maher, Corey Thomas, Brendan East, Joshua Larcombe, Melita Stevens, Anthony Matulick, Davis Veremu, Ardean Oldland, Julien Anese, Bridget Lindsay, Daniel Moss, Warrick Dyer, Ruwan Abeyrathne & Nicholas Antarakis.

New **Utility Corporate Members** include:

Logan City Council, Mount Isa Council & Murray River Council.

New **Corporate Members** include:

Airepure Australia, AMS Training & Solutions, BASF Australia, Water Treatment & Filtration Solutions, Grenof Water Technology, Topure Group, Australian Pumps Sales & Service, Haycarb Holdings Australia, Jacobi Carbons, Tank Enviro Systems & Gasco.

2017 COMING EVENTS

22 August	**Water Quality Awareness & Distribution System Management Seminar,** Wauchope (NSW)
23 August	**Water Quality Awareness & Distribution System Management Seminar,** Wauchope (NSW)
6 September	**Ixom 2017 Victorian Water Taste Test,** Bendigo
6 & 7 Sept	**80th WIOA Victorian Water Industry Operations Conference & Exhibition,** Bendigo
6 & 7 September	***qldwater* Annual Forum,** Brisbane
14 September	**Water Quality Awareness & Distribution System Management Seminar,** Cowra (NSW)
6 October	**FNQ Operations Interest Day and Charity Bowls,** Cairns
18 October	**Ixom 2017 Australia's Best Tasting Tap Water Grand Final,** Launceston
22 October	**Dial Before You Dig - Charity Golf Day, Hill Top Golf Club,** Tatura, Vic

2017 Committee

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NEXT EDITION

Article Contribution Deadline for the next edition is 6 October 2017

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