OPERATOR

February 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

Welcome to 2017 and we hope all our members had a relaxing and safe Christmas break.

Our staff have been busy producing the 2016 Annual Review which has recently been distributed to Members. The review provides an excellent overview of the organisation and all the activities that WIOA and our members are engaged in. It also provides the opportunity to celebrate the achievements of many of our members.

As we did in 2016, in the interests of controlling our environmental footprint, we have not mailed a hard copy to every member. For those who received the email version of the Review, printed copies are available if you would like one. Just contact the office and we'll mail one out to you.

In skimming the review, in a year of many highlights, the biggest and most gratifying achievement is that we have now passed 4,000 members for the first time. The continued growth of the Association is testament to the member focussed and value for money model established many years ago. We are still very reliant on the support and promotion of the benefits of being involved by all our Members.

Participation in WIOA's certification scheme is increasing in Victoria with 69 operators now meeting all the requirements to be certified. Having been appointed the national Certifying Body for water operators in 2016, WIOA has recently coordinated the transition of a number of operators from the NSW Certification Pilot into the WIOA scheme. Around 40 operators are expected to join the 14 already certified under the national Framework. We'd be pleased to hear from any other employers who might like to participate in the certification process.

On a related front, the trial implementation of the STP Certification Framework is now under way with 16 operators from a range of water businesses in the South East Queensland area participating. We hope that many of these operators will complete their training component in time to attend an award ceremony at our Queensland conference in Logan in June. WIOA is also working with qldwater in the development of a joint Wastewater & Recycled Water operator Certification framework. A first draft has recently been developed and we will look to undertake some validation of the content with both industry and the various regulators in the coming months.

With the demise of Government Skills Australia in late 2015, the responsibility for the management and maintenance of the Water Industry Training Package has been transferred to a new organisation called Australian Industry Standards (AIS). The members of the GSA Water Industry Advisory Committee, including WIOA, took up a position on the Water Industry Reference Committee under AIS and have been in this role since March 2016. A review of the structure and composition of members of all the Industry Reference Committees has been undertaken recently. Fortunately, WIOA has retained an automatic position on the newly developed Committee and we look forward to continuing to provide operational feedback into the structure and content of the Package.

Building collaborative relationships is an important component in ensuring that we are using WIOA's limited resources in the most effective manner possible and to avoid duplicating services or events. We already have a number of MOU's or operational understandings with a variety of organisations and we are pleased to have recently signed a reciprocal membership arrangement with Water Research Australia. WaterRA produces a large amount of research material annually and through our arrangement, WIOA is keen to help distribute any information with operational relevance to our members.

Planning for all the 2017 conferences is proceeding full steam ahead. We are excited that Hach has joined existing companies in Calix, Ixom and Xylem as Prime conference sponsors in 2017. The support of these companies and all our other event and award sponsors is greatly appreciated. We encourage all our members and conference attendees to support them whenever possible. We also note the contribution of outgoing Prime sponsors – Automation Group for their support over a number of years, along with EcoCatalysts.

The technical program for the NSW conference in Canberra in March is full of interesting platform and poster presentations from experienced operations staff and there is a wide range of Councils represented in the program. Delegate and visitor registrations are currently being accepted, with the program and registration forms available from the website. The Call for Papers for the Queensland conference in Logan in June closed on 24 February and we are still seeking more abstracts from operators in the poster category.

It was great to attend the kick off day for the Network Operator Development Program held at Melbourne Water's offices at Docklands. The presentations were first rate as was the level of interest and engagement of the participants. A report on the day appears later in this edition. Importantly, the idea behind this program was brought to WIOA by a couple of members with a passion for this field of the industry. The take home message is that if you have an idea that you feel can help improve or provide information to any operational area of the water industry, let us know and we'll try to work it into our mainstream activities.

Finally, those members yet to pay their 2017 fees would have received a reminder in the mail recently. Anyone not paid by the 10th March 2017 will be removed from the member database, so please make sure you pay promptly. Keep in mind that all financial Individual members will go into the bonus draw to win a $1,000 travel voucher, generously donated by Royce Water Technology. The draw will be made at the NSW conference in Canberra.

Until next time,

George Wall – WIOA Managing Director

PROFILE OF A MEMBER

Name: Col Kirkegaard.

Position: Supervisor Dawson North Water & Sewage.

Employer & Location: Banana Shire Council. Moura, Banana & Baralaba.

How long have you worked in the water industry and what attracted you to it? I have worked in the water industry for a bit over 10 Years. It was something different from what I was used to doing. I thought it would be interesting and it has been.

What do you enjoy most about your job? Working with the team and teaching all that I know to the ones coming on.

What are the major challenges in your current role? New upgrades and budgets.

How long have you been a WIOA member? 10 Years +

How do you relax? Fishing and having a beer.

Where do you live and what's the best thing about it? I live in Moura because it is quiet and we have the Dawson River and a lot of my friends live here.

QUICK QUESTIONS

Age: 63

Nickname: Grasshopper

Family Status: Married

Pets: Bird

Favourite food: Fish

Least favourite food: Pasta

Favourite TV show: Sport NRL (Queenslander)

Worst TV show: Neighbours

Favourite Movie: Rambo

Favourite Musical artist/s: Tina Turner

Favourite book: Any Western

Favourite team: Cowboys

Ambition in life: To retire and travel around Australia in our van with my wife Shirley

Hobbies: Fishing & Camping

Best Trait: Generous

Worst Trait: Not being able to let go at work and sit back.

Four people to invite to dinner: Tina Turner, Danny Green, Bob Hawk and Alistair Cumming.

VALE GARRY NORTHAM

It is with great sorrow that I inform all of the passing of our mate Garry Northam.

Garry left school at age 15 and joined NSW Public works where he stayed for 5 years before joining Taree Council. He was the third generation of Northam's with the council following after his dad and granddad to operate the old Taree Sewer Treatment Plant. He was with MidCoast Water since it was formed in 1997.

Garry operated the Dawson River Sewer Treatment Plant until 2002 when he became Manager of Treatment and Storage, a position he held until his retirement in 2015 after having racked up 39 years of service in Local Government. Gaz was held in high regard by all of his workmates and was always the first to lend a hand or offer some advice to those coming through the ranks.

He was a great believer in WIOA and a champion of the association at MidCoast Water. He was chuffed to be able to accept the inaugural NSW water taste test award on behalf of his fellow employees. He will be sorely missed by all who knew and worked with him.

Contributed by Lindsay Walsh from MidCoast Water

Garry Northam punches the air as MidCoast water wins the inaugural NSW Water Taste Test.

Garry Northam with the Taste Test trophy.

A MINUTE WITH COMMITTEE MEMBER ROBRAN COCK

Name:
Robran Cock

Position:
Regional Operations Manager

Employer:
TRILITY

Nickname:
Rob or Barry

Favorite food:
Mexican

Favorite team:
Adelaide Crows

Who do you admire:
Chris Hadfield (astronaut and science advocate)

Three people you would invite to dinner:
Albert Einstein, Steve Waugh and my Grandfather who I never met.

Thoughts on the water industry at the moment

It is an interesting time to be in the water industry. It feels as though we are moving into a new era, particularly operationally, where the focus is on service to customers more than it has been in the past. It will be interesting to see what this brings in terms of new investment in the industry and jobs creation.

What contributions are you hoping to be able to make with WIOA?

As a new committee member, I am hoping we can make South Australia more relevant to WIOA and get a good level of engagement with operators within this state. Hopefully we can hold relevant and targeted events that people want to attend and that those that do attend come away having learnt something that allows then to undertake their jobs better or more efficiently.

**** Editors' Note***

Robran is also the newly-appointed Chair of South Australia's Water Industry Alliance (WIA). He says it's an exciting time for SA and its water industry.

"We are well placed as an industry sector to export our first class expertise and products both nationally and to the world as the market grows in the face of climate change and increasing water challenges", he said.

"Historically we've used the 'driest state in the driest continent' mantra as an excuse for underperforming. But in recent years it's been our incentive to be inventive. Our water management capabilities, skills and technology are world class and that's reflected in the world's interest in what we've achieved and our plans for future development.

"In the last couple of years, WIA members have been very active in seeking out export opportunities by joining various State Government trade missions and this is paying off with a number of companies following up strong and promising leads.

"Water is already a multi-million-dollar industry in SA and the export potential for third world countries is enormous – running into the billions of dollars a year", Robran says. "We've been quite aggressive in seeking out new markets and there is now a growing situation where potential overseas customers are seeking us out and chasing us to meet with them and explain our technologies and their benefits. Countries including China, India and several South-East Asian nations are particularly interested in what's happening in SA.

"At the same time, there's growing national recognition and appreciation of the very high quality R&D work being undertaken by the industry in this state, and the role that that is playing in an extensive range of water treatment initiatives.

"There is an important need for us to continue to grow our capability for delivering and developing solutions within South Australia. There is some hard work to be done to maximise the benefit to our industry but this is the Water Industry Alliance's key role: to grow the South Australian water industry. The key areas where we are developing new technologies and capabilities are in clean water for drinking, treated wastewater for industrial and agricultural use, water network planning and management systems and policy development.

WIOA FOOTY TIPPING IS BACK IN 2017

To join go to **tipping.nrl.com**
and find the comp: **WIOA**
The competition code is: **Z7JCZ7DV**

The AFL competition will be created as soon as we are able to create the league on **tipping.afl.com**
The competition code will be provided in a future edition of 'Words'.

IS 3D PRINTING THE FUTURE OF WATER ASSET MANAGEMENT?

Additive manufacturing, or 3D printing as it's more commonly known, allows industries to create 3D printed objects from digital designs. Rod Priest, a mechanical engineer and metering support officer in Goulburn-Murray Water's (GMW) Asset Forward Planning team has created a program that is assessing how 3D printing could produce parts for water assets that can be used in GMW's asset management program.

The project, part of GMW's innovation program, was recognised at the 2016 Water Industry Operators Association (WIOA) Conference where Rod won the Kwatye Award. The Kwatye Award is sponsored by leading biotechnology product development company, Thermo Fisher Scientific Australia, and honors innovative projects that benefit the Australian water industry.

The award comes with a $6,000 grant for the project which Rod said will help the program look at how existing 3D printing processes and technologies can extend the life of water assets.

"3D printing will potentially reduce the cost of asset life, or increase the life of a particular asset. At the end of the day, it's all about cost for use, so we need to reduce the cost of our assets to our customers. 3D printing will be able to prolong the life, and make parts cheaper than traditional methods. Potentially some of the different materials that we can use will actually extend the life of a particular part, so there's a much bigger variety of material composition that we can use. We can also use coding technologies to actually strengthen the existing technologies, or the existing substructure."

3D printing has the potential to drastically reduce manufacturing costs as the materials used are much cheaper than conventional materials. It can also allow utilities to create parts that are no longer available through traditional manufacturing.

Rod said some of the current focus areas of GMW's 3D printing program include aging infrastructure around dams, and pump station components used for run-off drainage water and irrigation.

"We're looking at repairing particular components on some of those dam infrastructure assets as some of those are a hundred plus years old. Also, other particular components on some of our smaller pump stations, so we're looking at particular pump stations where we can actually improve the cost of pumping.

"We're looking at several different options across all of our asset base, but tending towards some of our bigger assets, rather than our smaller, more frequent assets. This technology focuses better towards smaller one-offs and customised components, rather than multiples of small components."

Rod Priest (c), Chris Haritou (R) from Thermo Fisher Scientific Australia and GMWs Innovation Manager, Andrea Pogue with the Kwatye Award at Goulburn-Murray Water offices in Tatura.

Since receiving the Kwatye Award, GMW has begun working with CSIRO to further investigate how this technology can be implemented in the industry. During initial talks with CSIRO's new 3D printing centre, Lab 22, Rod said depending on what project model GMW decides to go with, Lab 22 have expressed interest in the program.

3D printing technologies are providing water utilities with a new option for replacing aging asset components which Rod said revolves around innovation.

"I think the project scope is endless in terms of what we can actually use 3D printing for, it's not just a product, or a particular thing, it's a whole new way of thinking, and a new way of potentially developing all of our assets, and all of our manufacturing techniques.

"It's all about innovation in terms of if we can be smarter in delivering water to any of our customers, and that goes right across the board, we can reduce the cost of that water delivery. That process can then lead on to bigger and better things for the whole irrigation, and water delivery industry."

Contributed by Gina Tsao from Thermo Fisher Scientific Australia

WIOA'S NETWORK OPERATOR DEVELOPMENT PROGRAM

The Network Operator Development Program (NODP) commenced proceedings on 1 February 2017 with a cohort of 13 participants from 11 Victorian water corporations. Also present were all 7 members of the program's Advisory Committee, who observed the program content and provided support and comments where required.

The purpose of the program is to mentor and develop future leaders in Network Operations across the Victorian Water Industry. The program will help participants to share new initiatives or technologies within the distribution and collection systems between businesses, and to build new peer networks that will assist with issues and complexities that the operators deal with in the field.

Prior to the first session, the group started with a meet and greet dinner, followed by a "get to know you" session.

I had the opportunity to speak to the group on how the concept for the program came about and the formation of the Network Advisory Committee. The participants were asked to introduce themselves and to give three things they wish to get out of the program. These will be revisited at the conclusion of this year's program to see if these expectations were met. Having a network of industry peers who work in networks and distribution, was common amongst the replies.

The first day was aimed more at the high level end of our business. Focussed around Leadership in the Water Industry, the role of the Network Operators and some of our reporting requirements was emphasised. We then reviewed the responsibilities that government and water businesses, including their board and MD's, have in ensuring the delivery of quality drinking water to our customers.

Suzie Sarkis and Leanne Wells from the Department of Health and Human Services presented to the group detailing the expectations placed on the Water Industry for water quality, how we need to be aiming for best practice, and looking at the focus on choosing tap rather than alternatives.

Chris Webb from the Environmental Protection Authority then presented on our responsibility to ensure we minimise impacts to the environment and again looking at best practice options. It was noted that spills to the environment have lessened with a higher planned maintenance focus and with the assistance of technologies. These technologies include CCTV, high pressure jetting, swabbing and re-lining of our sewer mains.

This was then followed up by our keynote presenters in Managing Directors (MD's), Bruce Hammond from East Gippsland Water and Andrew Jeffers from Wannon Water. Both Bruce and Andrew spoke on the relationships between the

The NODP participants listening intently..

Minister, Board and MD's and how it relates to strong business management. The MD's received some direct questioning from the participants which in turn created some great discussion within the group. This session was really well received from the participants and both Bruce's and Andrews's time was greatly appreciated.

Mike Rankin from Water Training Australia completed the day through a session on leadership and identifying and dealing with different personality types within work teams. The participants learnt about the different leadership and management styles and personality behavioural traits which should be considered when leading a team of operators.

The group also looked at their own personality traits to gain a better understanding of themselves and how they fit within the team.

The feedback from the group at the end of the day confirmed the first session was highly successful and participants are looking forward to the rest of the program.

The old heads within the Networks Advisory Committee were just as enthusiastic as it was great to see this program commence after 12 months of planning and preparation. "One had to be reminded that one was not a participant".

Future sessions will examine: Water Quality, Water Distribution Systems, Wastewater Collection Systems, Pumps and Pumping Systems, and Asset Management.

A big thank you is extended to Melbourne Water for sponsoring the first day and making their fantastic facilities available, along with catering for the group.

We look forward to providing further updates throughout the year on the progress of the Network Operator Development Program.

Contributed by: Mick Mahoney, Manager Civil Maintenance, Wannon Water.

All the NOPD Committee and participants..

WTPO HELPER

As a water treatment operator Michael Fawcett from South Gippsland Water identified the need for an app to assist with dosing room calculations, either when changing the dose rate mg/L or working out the dose rate from the mL/min taken from the drop test. The idea was driven by his desire to do away with pens and paper and have the timer and the calculator right in his pocket.

Michael submitted an application for the 2014 Kwatye Award and his project was the recipient of the Award that provided funding of $6,000 for the app's development. The aim of the project was to develop an industry relevant app for portable devices such as smart phones, iPhones and iPads, containing a number of useful tools/calculators for water treatment plant operators and anyone in the water industry.

The project was not without its challenges, not the least being Michael's time to manage the project from just an idea into reality. Some of the project challenges included:

- Finding Australian programmers within budget
- Finding international programmers within budget
- Selecting an international programmer
- Communicating requirements of the project

Testing and refining the app

After 18 months of development, the app was officially launched at the WIOA Water Interest Day held in Marysville on 19 October 2016, where the features were demonstrated. The app now includes 15 calculations and 4 useful data loggers used in the day to day data collection operations of Water and to a lesser degree wastewater plant. Our jobs require a large amount of data to be recorded and the WTPO Helper has some useful tools to make this easier for operators.

The Calculations

- Chlorine Gas Feed Rate
- Solution Chemical Feed Rate
- Chloramination Ratio
- Dry Chemical Feed
- Dosing Solution Strengths
- Jar Test Solution Make Up
- Detention/CT Times
- Total Suspended Solids
- Total Dissolved Solids
- Maintenance Mains Volume Calculations

The Data Loggers

- Drop Test Timer and Logger
- Meter Logger
- Flushing Timer and Logger
- Dam Surveillance Timer and Data Logger

Simple sharing functionality allows the user to enter data in the field and easily send the data for quick entry into databases back at the depot or treatment plant. The app allows for data entry in areas without service, as the user is able to send through the logs when back in phone range.

WTPO Helper on an iPhone and iPad.

Members can download the free app for Android on Google play and from the Apple store for the iPhone or iPad.

A communication forum to support the WTPO Helper is also available through: www.wiacp.com.au where users can post questions or seek further information.

10 YEARS ON

If you have ever been to a WIOA conference there is a fair chance you would have been greeted by Sherryn at the registration desk. After starting work as a trainee administration officer on 5 February 2007, Sherryn recently celebrated 10 years of working with WIOA. What better way to celebrate the occasion than with a cake, shared with her 11 month old niece Ruby. They even let the rest of us have a bit of cake as well!

STANDARDS AUSTRALIA REPORT

In 2016, Standards Australia invited WIOA to participate and represent the Water Operations Industry on a working group committee. The group is called 'Australian mirror Committee WS-041 Service Activities – Water Supply and Wastewater Systems'

The scope of the Committee is to standardise a framework for the definition and measurement of service activities broadly relating to drinking water supply systems and wastewater systems.

The Committee is planned to meet a few times per year at Standards Australia with the agenda to:

- Discuss participation in ISO to develop technical specifications for flushable products (branded flushable wipe type products)
- Discuss further work programs based on the ISO working groups:
  - ISO/TC 224/WG 6 Asset management (of water and wastewater systems)
  - ISO/TC 224/WG 10 Flushable products

Committees such as WS-041 are called mirror committees because they mainly mirror the work that the international committee ISO/TC 224 does. These committees usually meet a few times a year and receive updates on international meetings. These updates are also distributed regularly via email circulation, and may request voting on particular issues and developments. If the committee decided that they would like to adopt relevant ISO standards into Australia, additional meetings may take place.

Wet Wipes clogging sewer pumps. (photo curtesy of North East Water).

The developments of this group and standards directly related to the water industry and operations are particularly interesting given the increased and on-going battles with personal hygiene consumable products like 'flushable wipes'. These products do not break down and disintegrate like toilet paper when flushed. Throughout Australia, water authorities are facing significant problems where non-suitable products, such as 'flushable wipes' are flushed down the toilet, as they create pump chokes and sewer blockages within the municipal sewerage systems.

Interestingly, in activities not associated with Standards Australia, in December last year The Australian Competition and Consumer Commission (ACCC) instituted proceedings in the Federal Court against two companies alleging that they each made false or misleading representations in relation to 'flushable wipes' they marketed and supplied in Australia. These proceedings are ongoing.

The committee is made up of technical experts that come from industry and other associations including AWA, WSAA, EPA Victoria, Consumers Federation of Australia, Australian Food and Grocery Council and Accord Australia. So far, meetings have been conducted in Melbourne and Sydney with three representatives from this group having attended an international conference in Europe in July 2016. In summary this group will continue to participate and observe the progress of the international standards committee ISO/TC 224 and possibly adapt this for Australia.

Contributed by Adrian Rijnbeek, WIOA's representative

PASS

Problem Accepted – Solution Supplied

WIN A TRIP TO NEW ZEALAND

PASS (Problem Accepted Solution Supplied) Award

The PASS Award provides an opportunity for operational staff to share their in the field innovations and fixes to problems so that others in the water industry can benefit. It is a fantastic opportunity for members of WIOA to receive recognition for their innovation and efforts and lets us share the good ideas and innovations with other Members.

Applications will be accepted until 1 March 2017 with the winner announced at the NSW Conference in Canberra. The prize for the winner is an all-expenses paid trip to join the WIOA contingent on the tour of NZ and to attend the WIOG operations conference to be held in Queenstown on 4 & 5 May 2017.

All the entries, including the winner of the award, will be published in the PASS Award booklet that provides our members with useful tips on improving day to day work practices.

WATER - CUSTOMER DRIVEN, ENRICHING LIFE

A useful lens in which to consider our future is through the United Nations Sustainable Development Goals (SDG's). In November 2015, UN member states (including Australia) adopted the SDGs, which describe 17 global priorities to meet by 2030 in order to combat the challenges currently facing our planet and society. Each SDG has a series of supporting targets – specific, actionable objectives that must be achieved to meet the goal. Together, the goals and targets provide a detailed framework and common language that governments and organisations all over the world can use to talk about sustainable development.

Since their adoption in November 2015, there has been a growing momentum around the SDGs - how they will be used by different sectors in society and what opportunities they present. The goals are ambitious, interconnected and complex - they require breakthrough thinking and a commitment to the collaborative approach.

For water utilities, the SDGs broaden the way many of us have traditionally viewed sustainability - from environmental stewardship, to now also include economic prosperity and social inclusion.

From an initial focus on a few goals that appeared most relevant, there is a growing realisation of the broad and interconnected contribution we can have across the priority areas outlined by the goals. While some goals and targets are more immediately relevant to us and we have a greater opportunity to influence (such as Goal 6 Clean Water and Sanitation), our activities contribute right across the spectrum in our roles as a service provider, employer, community partner, procurer of goods and services and manager of critical assets.

The index and dashboard developed by the Sustainable Development Solutions Network (SDSN) and Bertelsmann Stiftung showing country performance, highlights that there are still many challenges facing Australia in meeting these goals, in areas such as renewable energy, adult obesity, women's representation at senior levels, climate change vulnerability and waste management. These are areas where the broader water industry plays a role and we need to recognise our impacts both positive and negative in these areas. We can also demonstrate leadership in these realms.

Finally, the SDGs call for a bigger shift in mindsets than initially apparent, because they imply shifting our focus from minimising negative impacts to the deliberate generation of positive benefits. For example, what might the water sector do to find affordable solutions to the climate and health concerns in the SDGs to generate new products and services?

We've responded very well across Australia to previous challenges such as extreme drought. The SDGs, which have been described as a "purchase order from the future", now call for a new proactive approach – building on the fundamental role we already play in contributing to the health and well-being of communities.

Contributed by Pat McCafferty, Managing Director, Yarra Valley Water.

First published as a WSAA Blog in December 2016.

BIRDS EYE VIEW - Facilities Members Operate

Mareeba Wastewater Treatment Plant, Queensland

Administration, MCC, Blower and Biosolids Dewate

Mareeba SHIRE COUNCIL

Wastewater Treatment Plant Upgrade Project

The Mareeba Wastewater Treatment Plant Upgrade project is funded through a $6 million grant from the Australian Government's National Stronger Regions Fund, a $1.5 million grant from the Queensland Government's Building our Regions program, with the remainder funded by Mareeba Shire Council.

Downer Utilities Australia Pty Ltd were awarded the contract for the design and construction of the Mareeba Wastewater Treatment Plant in late 2015.

The new Mareeba Wastewater Treatment Plant is a dual basin Sequence Batch Reactor (SBR) system designed to treat up to 3.8 ML/day dry weather flow and up to 10.6 ML/day peak wet weather flow. The system is an activated sludge process providing biological nutrient removal. The effluent from the SBR flows to a polishing clarifier and a chlorine contact tank before being discharged to the nearby creek.

A brief description of the project scope of works is as follows:

1. A new dual basin SBR-type bioreactor (each 33 m long x 13 m wide x 6m FFL > TOC), each with a 9 m decanter.
2. Three new bioreactor aeration blowers, and two aerobic digester blowers and a compressed air system in a blower building.
3. Re-use of the existing secondary clarifier for treated effluent suspended solids polishing.
4. A new chlorine contact tank with inclusion of a de-chlorination chamber.
5. New service water system, drawing from the chlorine contact tank.
6. New chemical dosing systems for alum, caustic, liquid sugar, sodium hypochlorite and sodium metabisulphite.
7. A new aerobic digester (diffused aeration and supernatant off take).
8. New dewatering system, comprising liquid polymer dosing and belt press.
9. New switch room and switchboards.
10. New amenities buildings.
11. New standby generator.

Construction is approximately 75% complete with the majority of civil and concrete construction work now completed. Testing and commissioning is due to commence in April 2017, with the plant scheduled to be handed over to Council's operators by the end of June 2017.

The upgraded Wastewater Treatment Plant will provide for the current population and into the future whilst also providing significant environmental benefits for the receiving waters of Two Mile Creek; a tributary of the Mitchell catchment. The new treatment plant will have a capacity of 12,500 equivalent persons and allows for future expansion to increase the plant's capacity to 16,500 equivalent persons.

ering Buildings under construction.

Downer's Project Manager and MSC Manager W&W inspect the SBR construction.

TASWATER TAKES ON THE WORLD

TasWater team members from the Barrington water treatment plant, winner of Australia's Best Tasting Drinking Water competition in 2016, were formally recognised at a presentation in Launceston recently.

Barrington, which supplies water to Sheffield and Railton in the North West of Tasmania, won the title at the Ixom 2016 Australia's Best Tasting Tap Water competition held in Marysville, Victoria in October 2016. Attendees at the Victorian Water Interest Day and locals from Marysville tested the water for clarity, colour, odour and taste.

TasWater CEO Michael Brewster said "it's a great honour for Tasmania and particularly the team at Barrington to have won the title of best tasting water in Australia".

Tasmania has a lot of very small water systems serving many small communities which makes the job of upgrading infrastructure expensive and at times complex.

"We acknowledge while some communities in Tasmania have unsatisfactory water, TasWater supplies drinkable water to 98.5 percent of our customers connected to a water supply network.

We have made a commitment to upgrade those underperforming water systems over the next two years as part of TasWater's spending on infrastructure upgrades of around $100 million a year."

The sample from Barrington has recently been shipped to Berkley Springs, USA to compete against the rest of the world in the municipal water supply category of their international water test competition.

Christine Cottee (L) and John Grainger (R) from the Barrington Water Treatment Plant and WIOA Tasmania Advisory Committee Chairperson Darren Lord (C) with the Barrington water sample packaged up to be air freighted to the US.

TURNING AUSTRALIA'S BEST WATER INTO BEER

Most beer is around 95 per cent water and those produced at Seven Sheds Brewery in north-west Tassie are currently made with Australia's "best tap water".

A blind tasting late last year saw TasWater's sample from the Barrington Water Treatment Plant defeat all the other state finalists to claim the title of the country's "best tap water in Australia" for the next 12 months.

"Our cellar-door visitors often ask about our water supply," says Seven Sheds head brewer/co-owner Willie Simpson. "Now we can tell them our beers are made with Australia's best quality water from Lake Barrington. And it's the same water we offer visitors to cleanse their palates between tasting samples of our beers."

Turning water into beer - 7 Sheds Tasmania.

Seven Sheds Brewery opened in April 2008 and is still the sole craft brewery in the north-west region of Tasmania.

"We use predominantly local ingredients, including growing hops onsite, malted barley sourced from the nearby Quoiba maltings and, of course, water from Lake Barrington which is only 25km from our brewery. Some breweries adjust the chemical composition of their water but we're perfectly happy to use what we get direct from the source."

That award-winning water may yet be named "world's best" when it comes up against various international entrants in the USA in February 2017.

Seven Sheds flagship Kentish Ale was selected among Australia's top 150 beers in James Smith's The Great Australian Beer Guide (August 2016). Contact: www.sevensheds.com

Contributed by Willie Simpson

QUEENSLAND INNOVATIONS INTEREST DAY

On Thursday 24 November 2016, WIOA and Queensland Urban Utilities joined forces to hold an Interest day at QUU's Innovation Centre. The Centre is based at Queensland's largest Sewage Treatment Plant, Luggage Point, in Brisbane.

Typical Qld weather was supplied, sunny and hot, and the number of attendees was outstanding. We had over 40 people arrive to listen to a number of technical presentations, participate in tours of the Innovation and Education Centre, and also get an Overview of the Treatment Plant process from the Viewing platform with one of the Operators.

The attendees were welcomed by Kathryn Turner from QUU, and myself as Chair of the WIOA Queensland Advisory Committee. Technical Presentations included an Overview of QUU's Innovation Centre by Colin Chapman (QUU), Bill Collie (QUU) gave us an insight into their Waste to Energy operations for Co-generation, Jacob Frampton (Xylem) informed us all about Xylem's Innovation and Integration being part of their DNA.

Allan Neethling (Flow Services) provided an interesting overview on Clamp-On Flowmeters and their latest best practices and finally, George Wall (WIOA) gave us a rundown on the latest happenings within WIOA.

As part of the Interest day, we also held a WIOA Qld Advisory Committee meeting.

Discussions centred on

- Ideas for future QLD Interest days
- Spreading the word on Paper and Poster presentations for the 2017 QLD Conference to be held in Logan in June
- The need for articles the Operator and Waterworks publications
- The opportunity to supply a Birds Eye View presentation of any treatment plants for the Operator magazine
- PASS and Kwatye award entries.

Jacob Frampton from Xylem presents at the interest day.

A good turnout at Luggage Point.

At the Meeting, Colin Haynes was re-elected as Advisory Committee Chairperson for the next 12 months.

The delegates then enjoyed a great Networking BBQ lunch before spending time looking through the Innovation Centre where a pilot scale sewer system has been set up to test the impacts on sewer systems. The pilot scale model includes 1.2km of sewer pipes incorporating both gravity and rising mains. These have been built to replicate design standards for Queensland Urban Utilities.

We also were given an insight into QUU's Education Centre next door. Overall a very informative and well attended Interest Day and a big thanks to QUU for hosting the day.

Contributed by Colin Haynes (Unitywater), Chair of WIOA's QLD Advisory Committee

QUEENSLAND'S TOP DROP

Water from Toowoomba Regional Council's Mt Kynoch scheme was selected as Queensland's top drop in the 2016 Ixom Best of the Best Queensland Water Taste Test, with around 60 forum delegates participating in a blind taste-off of 14 samples from across Queensland. A panel of water experts then selected the winner from the top five entries.

The taste test took place at the ***qldwater*** Innovation Forum Technical Tour that was held at Colleges Crossing late in 2016.

An expert judging panel get put to the water test.

The top five samples were Livingstone Shire Council (Woodbury WTP), Queensland Urban Utilities (West Brisbane), Seqwater (Gold Coast Desalination Plant), Seqwater (Molendinar) and Toowoomba Regional Council (Mt Kynoch).

Congratulations to all the entrants in the taste test this year; as usual it was a close competition. Toowoomba's Mt Kynoch water will now compete against New South Wales in the "Water of Origin Taste Test" taking place at the WIOA conference in Logan in June 2017.

Matthew Donohue from Ixom tries out the water samples in the Queensland Taste Test.

SHOW US YA BAG WINNER

The Show Us Ya Bag competition was conducted through the second half of 2016, where WIOA members were challenged to come up with a creative photo that included the 2016 conference bag.

Graham Nisbet from the Automation Group liked the idea so much that he put up an iPad (valued over $800) to be given to the winner. By the way, Graham also put on his lycra and got a nice shot with his bag on his mountain bike.

There were some interesting aspects to the competition that caught our eye. Both Arthur Kokolekos and Dick Shaw organised a photo with the bag from a previous which although entertaining, unfortunately made their entries ineligble.

After receiving almost 30 entries the Automation Group sales team got the heads together and came up with the final 3.

- Glenn Jeffrey from Wannon Water Victoria, for his shot of the SES crew in training in the Big Desert
- Paul Gregg from Cowra Shire Council NSW, for his shot with himself at the bottom of Bridal Vale Falls in the Grose Valley Blackheath Blue Mountains
- Mike Sahayam from Palmerston North City Council, New Zealand for his photo of himself and the bag in front of the Twin Towers in Kuala Lumpur

Mike Sahayam deserves a special mention for his efforts by entering around a dozen photos from his travels across Singapore, Malaysia and India, including one of the Taj Mahal under the cover of darkness, as he was unable to take the bag inside.

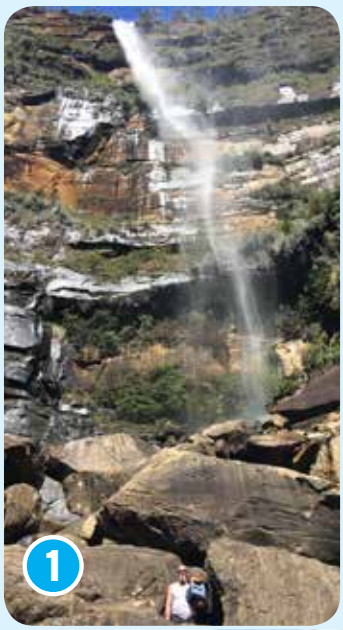
Bags soared to great highs in lifts above city centres and waterfalls, many sporting pursuits such as swimming, bike riding, hiking, cricket and car racing. One even went on a cruise, while quite a few were spotted at other conferences around the world.

Unfortunately there can be only one winner and after much deliberation, it was Paul Gregg's entry that was given the final nod of approval.

Paul caught up with another Paul from the Automation Group who presented him his prize. We are sure he and his family will enjoy it and put it to good use.

Thank you to all of our members who provided us with their amazing photos and trotted the WIOA bag around the globe. Thanks also to Automation Group for their support of this fun competition.

Contributed by Craig Mathisen, WIOA



1. *Winner – Paul Gregg in the Blue Mountains*
2. *Runner up – Mike Sahayam in Kuala Lumpur*
3. *Runner up – Glenn Jeffrey in the Big Desert*
4. *Michael Murphy from Barwon Water took the bag on a cruise*
5. *Wrong Bag Arthur*
6. *Wrong Bag Dick*

OPERATOR'S CORNER: A TWO-WAY STREET

The other day, I was talking to a very smart chemical engineer. With extensive commissioning and operations experience, this person demonstrates a very good common sense and practical approach to things. Anyway, we got talking about wastewater treatment, and not about the fashionable things such as computer simulations that improve the accuracy to four decimal places? No, we got talking about the unattractive and often overlooked preliminary treatment of grit removal.

So what is so all consuming about grit? Well, if you want to pick one single thing that impacts on the longevity (or otherwise) of mechanical equipment, then grit is it. Or rather, lack of grit removal. Believe me, I have seen pump impellers that you could shave with and aeration tanks that when drained have all of these little "volcanoes" around the aeration diffusers or "submerged islands" within anoxic tanks or low velocity areas of oxidation ditches. Conversely, I have been at plants where we have drained bioreactors intending to put a bob cat in for a couple of days to clean it out and have instead gotten away with two workers with a broom for a morning.

What goes wrong? First off, I am amazed and somewhat confused when checking out the capacity of "vortex" grit traps (the circular ones and the most common over the last 25 years). Somehow, the allowable "rise" rate (flow per minute divided by the surface area of the grit trap) increases as the diameter increases!!! To me, this means that gravity increases with increasing diameter of the grit trap-a neat trick if you can do it (before all of you grit trap suppliers start ringing me and telling me about the Coriolis effect or whatever you call it. I suggest, amongst other things, that people use bigger grit traps so you suppliers should actually make more money).

Grit removal.

The trouble is, it is very hard to performance test a grit trap (it is usually a bit tricky to arrange for peak wet weather flow to be sustained throughout a test and then having a controlled amount of grit entering the trap and capturing all of the grit leaving the trap).

So you have no proof if the trap is working or not. Lesson 1: it wouldn't hurt to evaluate the impact of using the rise rate for the smallest diameter grit trap and applying it when sizing a larger grit trap. Hampton Roads Sanitation District did a study years ago and I quote "For all three processes, grit is not substantially removed according to the vortex mechanism. Type I discrete particle settling velocity and thus surface overflow rate are the most important factors leading to removal of grit."

Another thing is that the performance of grit traps is based on so much percent capture of a certain size grit particle with specific gravity of 2.65. News flash!! "Grit" in sewage comprises all particulate inorganics including clays, silt, sand and grit and most of this material has a specific gravity well below 2.65 (a range of between 1.5 and 2.7 in the literature) so the SG of 2.65 is fairly meaningless. Lesson 2: Grit ain't grit.

The classic thing pointed out by this very smart chemical engineer was that, even if we get the grit trap sized appropriately, if we feed it into a grit washer/classifier that has a higher rise rate than that in the grit trap, then some of the grit separated in the grit trap will be returned back to the plant due to carryover from the grit classifier. This seems to defeat the purpose of the grit trap somewhat. Lesson 3. "Clean" grit in your grit bin may indicate more grit in your plant!

We also discussed operational factors such as why do we turn off grit pumps? All this does is give the grit a chance to consolidate and cement up. If you are getting to get a wet weather surge, you might want to consider running the grit pump continuously.

Moral: Grit removal is potentially a low cost solution to many maintenance problems.

Contributed by Peter Griffiths

WIOA LOOK-ALIKES

While reading through an edition of Operator a number of WIOA MD's family asked why he was not included in the look-alikes as they believe him to be a dead ringer for Deputy Prime Minister Barnaby Joyce.

George Wall
WIOA

Barnaby Joyce
The Nationals Member For New England. Deputy Prime Minister

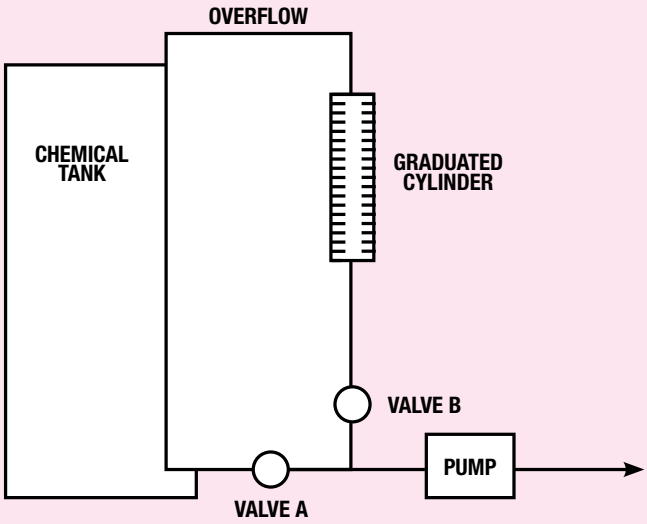
If you know of a WIOA member who has a look-alike send us a photo.

TECH TIP - DROP TEST FOR DOSING PUMPS

A drop test is a fast and easy way to check the flow rate of your chemical dosing pump. Dosing pump flow rates should be checked regularly (at least every 3 months) and always after any maintenance has been carried out on the pump. It is important to verify that the dose rate your pump is delivering is accurate.

Most modern dosing systems with a fixed supply tank (poly dosing systems for example) include a graduated measuring cylinder and valves, arranged in such a way that a drop test can be carried out. Note that drop testing is not always suitable for some types of chemicals, so your dosing system may not have a drop test cylinder. When in doubt check with your supervisor.

To safely carry out a drop test the calibration cylinder should be on the suction side of the pump, with two isolating valves, as shown in the drawing below. The top of the cylinder should be vented back to the storage tank or to a suitable drain, and should never be left open to the atmosphere.



Drop Test Procedure

1. Before you start, ensure that Valve A is open and Valve B is closed. Now start the pump and run normally. Slowly open Valve B until the graduated cylinder fills with liquid up to the zero mark.
2. When the liquid level reaches the zero mark, close Valve A and, using a digital stopwatch or wrist watch with a sweep second hand, start timing as the liquid level drops. Time it for a period of 60 seconds and note the mark on the cylinder, to which the level has dropped. This is the measured value. Re-open Valve A and close Valve B.
3. Most cylinders have two scales. The left hand scale shows the volume of the column in mL. Divide the measured value (the volume pumped in mL) by 1000 to get litres. The time taken was 1 min (60 sec), so to get the flow rate in L/hour, divide the volume by the time and multiply by 60. To make life easier, the right hand scale on the cylinder is often a direct reading in litres per hour for a 1 minute test.
4. The test is done. Record your readings and check against the pump dose rate you set, to ensure it is within specification.

By Bill Oldroyd, courtesy of Simmonds & Bristow training news, December 2016

A DUCKING GOOD STORY

In November, an unusually nice thing happened at the Bundamba Sewage Treatment Plant (STP) in Queensland.

Maintenance contractor for Queensland Urban Utilities, Utilita was on site to do Penstock maintenance for one of the offline reactor tanks (this involves taking close up photos using a Go-Pro). Whilst on the job, the Utilita crew – Gavin Allchin and Matt O'Neill, both former employees of QUU – heard cries (be that quacks) for help from inside a pit.

After following the quacks, they discovered a brood of 12 ducklings was stuck inside an effluent channel, stranded, and unable to be reached by their mother duck.

With determination, ingenuity and modern technology they managed to save all 12 ducklings and return 11 back to their mother.

One of the rescued ducklings.

Duck rescuers - Matt O'Neill and Gavin Allchin from Utilita.

Here's how it unfolded:

- They used a Go-Pro to watch the ducklings come down the outlet pipe.
- They then took to a specially designed (on the spot) hook, to guide the ducklings.
- Next they reached for a pool scoop, to safely catch the ducklings and transport them back to their mother.
- And finally, after a great deal of patience and perseverance, mother and most of her brood were reunited.

The last duckling rescued could not be returned as mother duck had disappeared to safety with her reunited brood. This last duckling was taken away, gently, to be housed with Utilita's Peter Hannasky (also a former QUU employee, whose partner is a wildlife carer) until suitable family replacement could be found. Thank you to our friends at Utilita for this great display of human kindness, and for ensuring a happy ending for the local ducklings.

Contributed by Stacey Cory, from QUU

HEX PANEL BAND SCREENS HAVE ARRIVED

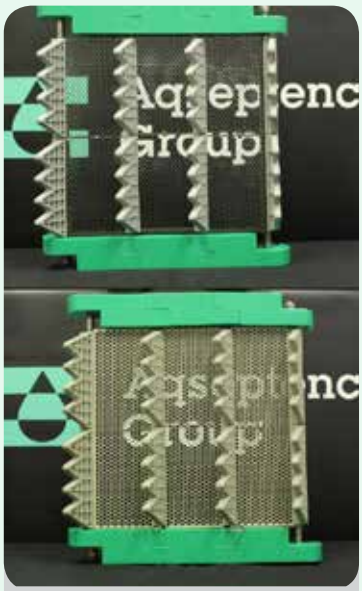
From manual rake screens to step screens to drum screens and now band screens; inlet screens have been developing rapidly to deliver process and operational efficiencies. Band screens have become the go-to screen due to their unmatched high capture rates, low maintenance requirements and superior hydraulic performance. They can also be easily retrofitted into many existing plants.

Aqseptence Group Australia has just completed field trials of new patented HEX panel technology which is ready to be made commercially available. Introducing the HEX panel, a completely Stainless Steel 316 screen panel that has greater than 90% open area compared to the less than 60% open area of a conventional plastic perforated plate. This represents an increased open area of greater than 40% providing the same proportional increase in flow throughput.

Field trials have exceeded expectations with improvements on both capture rates and hydraulic performance. Trials have shown that a 5mm perforated plate band screen achieved an average 85% capture rate with screenings bin reaching full capacity every 24 hours. With the newly installed HEX panels, the bins now reach full capacity every 17 hours. Additionally, the extremely high open area has improved panel cleaning efficiency and greatly reduced aerosol production.

The increased hydraulic performance using the HEX panel means cost savings to customers through smaller and more efficient units. It also means that many existing inlet works that couldn't be retrofitted with perforated plate band screens due to existing civil and hydraulic constraints, can now most likely be retrofitted with HEX panel band screens.

The HEX panel is Stainless Steel 316 and with 24 individual welds per square centimetre of screen panel, there is no doubting it has been engineered for the toughest of environments.



Hex Panel Band Screen panel (Top). Conventional Perforated plate panel (Bottom).

The open area improvement can be seen in the photo comparison of the new HEX panel and previous full-bore perforated plate panel. The HEX Panel has been developed in Australia by our Australian Engineers focused on improving headworks globally and the world has taken notice.

Export of Australian made Hex Panel Band Screens are expected in Q2 2017.

To arrange a technical presentation or proposal contact Zak Floyde Smith at Aqseptence Group zak.floyde.smith@aqseptence.com

GORMAN RUPP IMPROVES SAFETY AT OBERON STP

The Oberon Council was looking to improve safety for the operators responsible for maintaining pumps at their sewage treatment plant. Their existing submersible pump operating on their sludge lagoon was suspended under a floating pontoon, and to gain access to the pump, operators needed to extend a ladder from the bank to the pontoon. They then needed to "walk the plank" to get to the submersible, with the ever present danger of falling into the sludge.

Hydro Innovations suggested a Gorman Rupp self-priming wastewater pump could be mounted on the bank of the lagoon, allowing quick, easy and safe access to the operators for monitoring and service.

A Gorman-Rupp T4A3S-B Super T Series pump was selected for the job. This pump is capable of flows to 42 litres per second (L/S), heads to 33 metres, and operating on suction lifts up to 7.6 metres, so the short run from the bank to the lagoon was an easy one.

Gorman Rupp pump on the bank.

Gorman Rupp pump and old pontoon pump.

The pump will handle spherical solids up to 76mm, but more importantly, is capable of handling stringy materials such as rags and wet wipes. In extreme applications where "ragging" is chronic, the Gorman-Rupp Super T Series pumps can be upgraded with the new "Eradicator Solids Management System". This new system incorporates a lacerating tooth to prevent build-up of material on impeller vanes, along with a re-designed inspection cover-plate to allow operators much easier access to pump internals.

It is not only the move to the bank that has improved safety and ease of maintenance for the operators. Adjusting pump clearances can be done in minutes, externally, without operators being exposed to raw sewage. This has a flow on effect. Because clearance adjustments are more likely to be done (because it is so easy and clean), pump efficiencies can be kept at their maximum, and blockages become much less frequent. This quick and easy preventative maintenance step will greatly reduce operator intervention, improving safety and minimise costs.

Other pumps in the Gorman-Rupp range can handle flows to 250 L/S and heads to 95 metres. Pumps are also available with hardened components for abrasive applications and duplex stainless steel components for corrosive and abrasive applications.

Oberon Council are pleased with their investment to improve working environment of their operators.

More information from skandic@hydroinnovations.com.au or www.hydroinnovations.com.au

COMBINING CHEMISTRY WITH MICROBUBBLES TO REDUCE RO MEMBRANE CLEANING FREQUENCY

If membranes are cleaned efficiently, they will need cleaning less often and, as a result, use less cleaning chemicals. Genairclean provides a cost-effective energy neutral solution to cleaning problems.

UF and MF systems already use air bubbles for foulant removal, but the Genairclean process goes further by combining chemical and physical bubble generation to enhance foulant removal. Research at our membrane autopsy facility proves that foulants are rarely single components rather they occur as complex interactions between different substances which require multiple mechanisms to achieve complete removal.

Chemical bubble generation

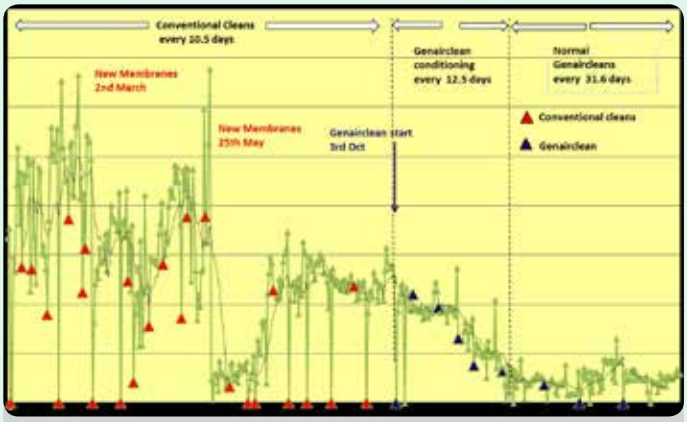
Cleaning chemicals Genesol 704 and Genesol 701 combine multiple chemical cleaning mechanisms to disrupt and fully remove foulants, clean membranes refoul slower.

- micro-bubbles
- normal osmosis
- effervescents
- detergent
- surfactant & chelants

Physical bubble generation

The Genairator uses an energy neutral method to induct air into the CIP solution from the atmosphere. This can easily be incorporated into existing CIP systems. When bubbles expand and collapse close to boundaries, a shear flow is generated which is able to remove particles from the surface.

During the 'soaking' phase Genesol products loosen deposits at the membrane surface. The high ionic strength of the cleaning solution causes permeate water to flow to the feed side of the membrane lifting deposits away. In the 'circulation' phase the Genairator system creates an evenly distributed flow of air bubbles along the membrane surface that agitates and lifts the foulants.



1st stage normalised dP after cleans with Genairclean + Genesol 704.

Data from field tests at an industrial water reuse site in the UK is shown below. The RO membranes fouled rapidly with clay, biofilm and waste chemicals requiring CIP every 7 days with membranes replaced every 18 months, the Genairclean system has been in use since 2014 and the membranes are now cleaned on average every 2-3 months with no replacements.

For further details please contact Russell McNab at RPL Trading Ltd russell@rpltrading.com.au

GAMAJET 10

Gamajet 10 from Spray Nozzle Engineering offers specialised jet cleaning product and engineering solutions, based on its key technologies of heat transfer, separation and fluid handling. Every device is custom selected for optimal cleaning and provides a solution for every tank, tote and vessel, regardless of shape, size or internal obstructions. Their products use patented technology to save companies billions of litres of water and chemicals, millions of hours, and facilitate massive increases in plant productivity and worker safety, all over the world.

The Benefits of Gamajet 10 include

- Eliminate hazardous confined space entry
- Reduce water and cleaning agent usage
- Decrease cleaning time by up to 85%
- Lightweight for easy handling
- Durable and long-lasting

When it comes to underground storage, today's formulations present many challenges. Whether it's for fuel, water, waste or oil, any contents are prone to contamination. Tank owners are looking for answers. Often the solution requires completely cleaning the tank; a task made difficult by limited or confined space entry options into storage tanks. Gamajet, a world leader within the key technology areas of heat transfer, separation and fluid handling, has created multiple products that clean any size fluid tank, quickly, thoroughly, and without cutting and entry. This efficient cleaning method utilises the latest tank cleaning technology, because regardless of use, stored content, sitting in AST, UST or other portable storage, must perform as expected. Gamajet devices can also be used to polish the fuel. In many cases, the fuel is used as a cleaning agent, powering the fluid-driven cleaning device in its 360° pattern, scouring the tank clean. Tank owners and contractors are now turning to Gamajet from Spray Nozzle Engineering to solve their storage tank cleaning challenges.

Contact Spray Nozzle Engineering
sales@spraynozzle.com.au or visit
www.sprayingsolutions.com.au

ALTERNATIVE WEED SPRAYING

Glysophates whether rightly or wrongly have received a huge amount of negative press due to the health dangers associated with Glyphosate poisoning, with some symptoms such as breathing difficulty, headache, nausea and vomiting.

At the beginning of this year, based on the issues with the wide spread use of Glyphosates, we were asked by a council to find an organic weed killer that smelled like "Pine O' Clean".

After a lot of research we came across a company called Certified Organics, and eventually met up with the owner of the company who gave us a sample of the product BioWeed to try and see for ourselves.

So how does it work?

The product is manufactured from a derivative of pine oil, and has been certified as organic. It does not poison the plant and is non systemic, rather it strips the outer coating (lipid layer) off the leaves, without this the plants cannot control their water loss resulting in fast death.

Gary (L) from GEMM knocking out some of WIOAs weeds under the watchful eye of Craig Mathisen from WIOA.

When it comes in contact with the seed bank it acts in a similar way, knocking out future generations of weed growth.

With its organic certifications, it is safe to spray right up to the base of plants, and being non systemic, there will be no transfer into the plant / crop. Controlling over 3,000 weed species, the spray biodegrades within 72 hours and results in a much healthier soil condition, improved worm and microbial activity.

Spraying Dates

1. *21 September at 4.00pm*
2. *23 September at 10.00am*
3. *12 August.*

4 weeks later 23/10/16

Ten weeks after there is no signs of weeds returning.

The photos show the results of a demonstration that was conducted at the M.W.O.A. Conferences held at the Bendigo Exhibition Centre. At this event one person commenting that it was one of the most beneficial and informative demonstrations he had seen in all his years.

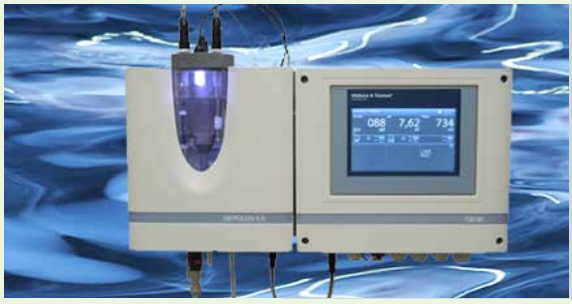
For more information or to organise an onsite demonstration please contact Gary Johnson from GEMM by email gary.johnson@gemmchemicals.com.au

EDITORS NOTE: On his normal rounds, Gary dropped in to the WIOA office and provided staff with a quick demonstration. We can report that the weeds that were sprayed have subsequently passed away and not returned.

DEPOLOX® 700 M ANALYZER FOR POTABLE WATER

The DEPOLOX® 700 M is designed for measurement and limited control tasks in the drinking and process water industry. The analyser can incorporate up to six measurement parameters: free chlorine, total chlorine, pH, oxidation reduction potential, conductivity and temperature.

The system includes four single feedback controllers that can be used in constant process flow applications. In case of drinking water as well as other variable flow disinfection applications four milliamp outputs and fieldbus modules can be utilized to transmit the measurement data to a plant logic control system for chemical feed automation.



Depolox 700.

The DEPOLOX 700 M device uses a 7" colour touch panel for an intuitive user interface and an LED lit flow cell that can be programmed to change colour in case of an alarm condition. The user interface can be replicated on a smart phone or tablet via the standard Ethernet communication port.

All measurement parameters are shown on the main screen and a single touch of any of the configured parameters leads to a trend graph, parameter set-up and calibration detail.

The flow cell, with either pressurized or non-pressurized sample water outlet, can be fitted with up to six measurements. The bare electrode cell is integral to the flow cell and can be configured to measure either free chlorine, chlorine dioxide, ozone or potassium permanganate.

The flow cell includes a small electronics where all analogue sensor signals are converted to a digital signal which allows it to be separated from the electronics up to 1KM without risking the loss of the sensitive sensor signal.

More information at:

www.evoqua.com/en/brands/Wallace_and_Tiernan/Pages/DEPOLOX-700-M.aspx or email: sales.au@evoqua.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**:

Mark Abraham, Arron Adams, Ashlyn Allen, Adam Amos, Monica Antwi, Damien Baillie, Rob Barron, Paul Barry, Daniel Baxter, John Beck, Gerado Belmonte, Matt Benstead, Ashlee Black, David Blackburne, Anthony Blacklock, Greg Bowden, Kalan Braun, Scott Braunack, Gary Brumby, Fiona Bullivant, Hannah Burrow, Adam Burton, Shannon Chapman, Sophie Chiles, Donna Clapp, John Collins, Russell Couper, Robert Davies, Phil de Groot, Lincoln Dibben, Darren Dohnt, Sylvain Momo Dontack, Jim Drysdale, James Filewood, Damien Fitzgerald, Daniel Flanagan, Grant Frahm, Patrick Geeves, Leigh Gersbach, David Glover, Jarome Graetz, Max Gray, Mark Griscti, Ashley Groom, Matthew Gulliver, Aundre Haggar, Steve Harris, John Hartgers, Steve Head, Brett Herberte, Michael Hills, Wayne Hislop, Callum Hobbs, Jonathon Horsfall, Grant Howard, Nicole Hughes, James Ireland, William Iro, Peter Jackson, Preethi Jayasiri, Robin Johnson, Troy Jones, Leah Jones, Malcolm Kalms, Ilho Kim, Carol King, Sushrut Kulkarni, Clay Lamb, Mike Lansley, Danny Lawrence, George Lech, Jason Lee, Corey Legg, Greg Liebig, Rongtao Liu, James Livingston, Paul Lovasz, Sean Malone, Paul Martin, Karl Martin, Phillip McAlister, Robert McIntyre, Gareth McKenzie, Peter Menz, Ross Menzies, Marc Middleton, Greg Millican, Greg Milne, Ediie Moir, David Mumberson, Ben O'Donnell, David Ollerton, Nick Ouston, Murray Oxnam, Allan Packer, Dushyant Patel, Geoff Pateman, Darren Pawley, Murray Pearce, Warren Petty, Luke Prowse, Matt Reusch, Jack Ridley, Christopher Riley, Amber Robinson, Michael Roche, Terry Roche, Brendan Roesler, Rob Romeo, Jake Roney, Roland Rupp, Martin Ryan, Mahdi Salehi, Andrew Scott, John Sebasio, Rod Shankland, Tom Sheaves, Dirk Sheldon, Grant Simpfendorfer, Daya Siriwardena, Michael Smith, David Smith, Estera Sparchez, Jane Stokeld, Nathan Strazdins, Adam Summerton, Phil Tibbey, David Thienenkamp-Jaime, Kathryn Turner, Damien Turner, David Van Wyk, Gavin Vears, Tim Vos, Kai Wallasvaara, Logan Walter, Matthew Watkins, Andrew Watson, Lester Watterson, Cameron West, Mimia Whap, Tony White, Wayne Williams & Jeff Wright.

New **Utility Corporate Members**:

Riverina Water County Council

New **Corporate Members**:

Syntholine Products, Radiodetection Australia, Caprari Pumps Australia, Aussie Trenchless Supplies, Kayden Industries, Geomembrane Technologies, ISH24, Mettler Toledo, Neptune Diving Services, Primus Line, Terra Firma Industries, ADC Plastics, Hydrographic Technologies, Glencore - Mount Isa Mines, Autech Control Group, Laboratory Systems Group, High Risk Safety Australia, Ampcontrol, Hydro Australia, Denso Australia, NVMS Soultions, Kraus & Naimer & PCA Echologics.

LIGHTER SIDE

COMING EVENTS

1 March	PASS Award applications close
8 March	South Australian Wastewater Interest Day, Bolivar WWTP
15 March	Tasmanian Wastewater Interest Day, Longford WWTP
17 March	Queensland Charity Bowls Day, Yandina
29 & 30 March	11th WIOA NSW Water Industry Operations Conference & Exhibition, Canberra
20 April	Queensland Interest Day, Mt Crosby
28 April - 6 May	WIOA Tour to New Zealand and WIOG conference, Queenstown
11 May	NSW Wastewater Interest Day, Yamba WWTP
7 & 8 June	42nd WIOA Queensland Water Industry Operations Conference & Exhibition, Logan
20 July	Kwatye Applications close
6 & 7 September	80th WIOA VIC Water Industry Operations Conference & Exhibition, Bendigo

2017 Committee

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Mob 0429 701 237

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Colin Haynes Mob 0419 763 054
Chairman Queensland Advisory Committee

Robran Cock Mob 0407 226 130
Chairman South Australia Advisory Committee

Darren Lord Mob 0417 506 480
Chairman Tasmanian Advisory Committee

Anthony Evans Mob 0419 103 885
Chairman Victorian Advisory Committee

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NEXT EDITION

Article Contribution Deadline for the next edition is 10th April

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