

rewater

farming with recycled water



Victorian Water Authority nearing 100% recycled water

By Steven Smolanaars



In the last financial year, Western Water conserved a total of 607 megalitres (ML) of drinking water by substituting recycled water. This is an outstanding result and an encouraging step forward for the protection of local drinking water supplies. Western Water continues to promote the concept there is no such thing as 'waste' water as they work toward achieving beneficial uses for all recycled water. Considerable work has been undertaken in the past 12 months towards this goal, including projects to supply recycled water for irrigation to Sunbury's Secondary College, Salesian College, Boardman Reserve, Langama Park and Clarke Oval, Gisborne's Sankey Reserve and Botanic Gardens, and the Woodend Racecourse Reserve.

Western Water is well on the way to achieving its short-term target of reducing demand for drinking water by at least 850MLs per year by 2010 through recycled water substitution.

How much is recycled?

Western Water recycled 83% of all water received at its wastewater purification plants during 2003/04. Each plant's current percentage of water recycled are:

- Sunbury - 54.8%
- Gisborne - 52.1%
- Woodend - 79.8%
- Romsey - 100%
- Riddells Creek - 100%
- Melton - 100%
- Bacchus Marsh - 100%

Recycled Water Usage 2005/06

- Agriculture 68%
- Environmental discharge 23%
- Urban and industrial uses 8%
- On-site treatment processes 1%

► p.2

HAL

features

Victorian Water Authority nearing 100% recycled water 1

Recycled water not to blame 2

Water recycling for agricultural and horticultural applications: training course 4

Victorian homes connecting to recycled water 4

Australian guidelines for water recycling released 5

Closing the gap - EurepGAP accepts produce grown with recycled water 6

AWA Master Course: Evaluating Water Recycling Projects 6

press round up

Australia 7

events

Australia 11

good reads 12

about rewater 12

From the editor

ReWater has been developed in recognition of the growing interest in the use of recycled water in agriculture.

We would like ReWater to become a forum for you to communicate your thoughts about the beneficial use of recycled water.

If you would like to receive a copy of ReWater electronically, email us at rewater@recycledwater.com.au

If you have articles, ideas or would like to raise issues in the letters to the editor, submit them to the National Coordinator for Recycled Water Development in Horticulture.

Daryl Stevens
rewater@recycledwater.com.au
t 08 8303 6707
m 0418 802 621

Victorian Water Authority nearing 100% recycled water

► p.1

Witchmount Estate winery was one of the first customers of the award-winning 42km Sunbury-Melton Recycled Water Scheme. Located in Rockbank, Witchmount was initially a hobby farm of six acres, supporting 6000 vines. Today, using recycled water for irrigation, Witchmount covers 55 acres and supports 55,000 vines of seven different grape varieties, including Cabernet Sauvignon, Chardonnay, Shiraz, Pinot Grigio, Tempranillo and Barbera. A continuous supply of recycled water has enabled the Witchmount brand to consolidate its place in the Australian wine industry. Recycled water provides Witchmount with a reliable water supply in the face of tougher water restrictions. Owner Tony Ramunno says there has been a marked increase in the quality of fruit over the last three years. He is now able to give the vines a water whenever they really need it rather than just when water is available.

www.westernwater.com.au/downloads/Recycled%20Water%20News%20Spring_2006.pdf

Recycled water not to blame

Dr Daryl Stevens, Arris Pty Ltd

Recently in California there was a food-borne outbreak of E coli O157:H7 which has been attributed to the death of 3 people and made 200 people sick. Spinach was one food source investigated. Some of the spinach in the Northern Salinas Valley is grown with Recycled water from the Monterey Regional Water Pollution Control Agency (MRWPCA, www.mrwPCA.org). Consequently, a few public figures immediately pointed the finger at recycled water; with no scientific evidence to support this claim. In fact, the science and the quality assurance program suggested it could NOT be from recycle water.

► p.3



Recycled water not to blame

While a California State Senator wanted to link the recycled water to the problem, Keith Israel (General Manager, MRWPCA) said, “None of the Federal or State regulators even came to visit the Monterey wastewater treatment plant”. This was most likely because they knew the high standards of the quality control systems used in this water reclamation facility. The recycled water was fully tested and there had been no report of non compliance.

Some suggest that the contamination problem seemed to have started in the mid 90's, however, that was prior to commissioning of the water reclamation facility at Monterey (1998). Cattle borne contamination has previously been raised as an issue in this area.

The FDA inspection team spent most of their time at cattle farms near where the spinach was grown. The contaminate (E coli) has now been confirmed to have come from cow manure from a certain ranch. As of yet, the investigators still don't know how it got from the ranch to nearby spinach fields but are considering that it may have been through feral pigs.

Keith also commented that “... it is also interesting to note that during the whole investigation we did not see a newspaper or commercial publication pay a lot of attention to erroneous information spread through a number of website and BLOGs. Especially now there is a verified link to cow manure.”

The best and most accurate reporting was done by the local newspapers:

www.montereyherald.com/hld/montereyherald/
www.californianonline.com
www.mercurynews.com

The contamination incident above highlights a number of important public relations and recycled water quality considerations and lessons:

- » If anything goes wrong, recycled water (the new thing in the production systems) will be blamed; be ready for it.
- » The incident highlights the safety of using recycled water for irrigating food crops. ie the quality of recycled water and the safety margins used to ensure public safety have not been breached. Having extensive quality control data is a plus as well as having a third party conduct independent testing.
- » Developing a crisis plan and response team can be advantageous as it's important that all involved in your operation know what to do and how to respond. Media training is helpful as you'll better understand what they want from you and how to keep the interview focused on your key message.
- » Spend time with local and regional regulators when things are going well to let them know what you are doing and the quality control steps you're taking. Encourage them to visit your site and even take



samples. That way, if something occurs nearby, they can talk to the media with confidence as they have seen your operation and realize that you're not a likely suspect.

- » It is important to manage the whole farming operation to ensure production of quality produce grown with recycled water. Once the risk assessment is completed and preventive measures are in place to minimise identified risk, the higher risks to a recycled water scheme public relations are usually from other parts of the farming practice or other farms without QA and risk management programs.
- » There is little control of the quality of information available on the world wide web (www), yet this is one of the most effective communication tools; this will be even more so in the future.
- » From the event described above it was obvious that some members of the Californian public may be still coming to terms with the safety of using recycled water in agriculture. This observation highlights the requirement of on going communication programs.

Recycling of water for agricultural use is a relatively old concept for the scientific and water industry. The technology to recycled water is well accepted and proven in hundreds of reuse scheme around the world. However, we must continually maintain, remind and improve the understanding and acceptance of water recycling with the general public.

As recycled water quality is always questioned, a proactive approach that relies on science and monitoring to prove that the water quality is fit for the intended use is crucial (ie fit-for-purpose). We must also recognize the power of information provided through all sources (printed and electronic) and develop communication strategies that ensure credible information is readily available for the general public and media when they seek it.

Footnote: Keith Israel is the General Manager of Monterey Regional Water Pollution Control Agency (MRWPCA, www.mrwPCA.org), Monterey, California, USA.

Water recycling for agricultural and horticultural applications: training course

February 12 - 13, 2007

Learn about the benefits and hazards of irrigating with recycled water, and how to determine if the water quality is appropriate for the intended use. Is your recycled water fit for the intended purpose from an agronomic and environmental perspective? This is a practical course aimed at developing real skills in water recycling for agricultural and horticultural applications. All parts of the course integrate a range of urban landscape, domestic gardens, recreational turf and production horticultural crops, as examples and case studies, to discuss the practicalities of operating and managing recycled water schemes.

Issues addressed day 1 » Federal and state guidelines for recycling water (including Australia's National Guidelines for Water Recycling) » Principles of risk assessment in the context of national and state guidelines » Recycled water sources and quality » Recycled water supply arrangements and the cost of recycled water

Day 2 » Managing risks posed to the environment and user from recycled water (including agronomic risks) » Maximizing yield and plant quality while minimizing detrimental environmental impacts » Hazards and beneficial elements of recycled water » Preventive measures for minimizing any risks to production, quality and environment » Welfare, health and safety when using recycled water » Developing and maintaining monitoring programs with good record keeping



What do you get?

» Access to world leading experts » CD with course notes, including summary sheets of the case studies » Brochures relating to growing crops with recycled water » A subscription to ReWater a quarterly publication on using recycled water to grow plants » Links to local & global websites that can be used as information sources

Who should attend?

All practitioners in the water industry who have a keen interest in growing plants with recycled water, or are developing recycled water schemes that will grow plants or have environmental impacts.

Presenters: Drs Daryl Stevens and Anne-Maree Boland
Register at www.iwes.com.au

Brochure on all courses www.iwes.com.au/pdf/Sydney%202007%20Interactive%20Brochure.pdf

Victorian homes connecting to recycled water

Source: AWA News, 15/10/06

Hunt Club Estate

www.southeastwater.com.au/sew/index.asp?link_id=1.1590
<http://huntclub.com.au/>

Water Minister John Thwaites has launched the state's first domestic water recycling system at the Hunt Club estate in Cranbourne East, which is supplied with recycled water from South East Water. At the launch, the first of up to 43,000 lots were connected to a centralised dual-pipe recycled water system. Around 1200 homes at the estate will eventually be connected to recycled water, saving about 200 million litres of drinking water each year.

The water supplied to the Hunt Club is supplied with water from Earthtech's Eastern Irrigation Scheme. Earthtech is the wholesaler of recycled water to South East Water.

Sandhurst Club

www.sandhurst.com/residentail.html

Sandhurst Club has been a pioneer and true innovator in the use of recycled water. It is one of the first developments in Australia of its type and size to use recycled water on such a large scale. It was awarded the 2005 UDIA Award for Excellence in Water Sensitive Urban Design.

► p.5

Victorian homes connecting to recycled water

► p.4

Class A recycled water irrigates the golf courses and is used for parks and open space as well as by residents for gardening and toilet flushing. These uses create significant savings on water bills and drinking water. South East Water will be the provider of recycled water.

In addition water sensitive urban design allows all urban run-off to be collected and treated on-site. Catchment management systems are also in place to help filter and regulate run-off from the surrounding region. Numerous wetlands throughout the estate help to naturally treat water run off as well as attract wildlife.



Australian guidelines for water recycling released

www.ephc.gov.au/ephc/water_recycling.html

The Environment Protection and Heritage Council and the Natural Resource Management Ministerial Council recently (24/11/2006) released the Australian Guidelines for Water Recycling (Phase 1). The guidelines comprise a risk management framework and specific guidance on managing the health risks and the environmental risks associated with the use of recycled water.

Phase 1 of the guidelines focuses on:

- » large-scale treated sewage and grey-water to be used for:
 - residential garden watering, car washing, toilet flushing and clothes washing;
 - irrigation for urban recreational and open space, and agriculture and horticulture;
 - fire protection and fire fighting systems;
 - Industrial uses, including cooling water; and
- » grey-water treated on-site (including in high rise apartments and office blocks) for use for garden watering, car washing, toilet flushing and clothes washing.

Phase 2 of the guideline is already underway and expected to be completed by the end of 2007. Phase 2, will focus on stormwater reuse, managed aquifer recharge and recycled water for drinking.

The phase one guidelines have been endorsed by the Environment Protection and Heritage Council, the Natural Resource Management Ministerial Council

and the Australian Health Ministers' Conference, and can be downloaded from www.ephc.gov.au/ephc/water_recycling.html.

The full reference for the Guideline is:

NRMMC and EPHC 2006 Australian Guidelines for Water Recycling. Managing Health and Environmental Risks. Phase 1. National Water Quality Management Strategy 21. Natural Resource Management Ministerial Council. Environment Protection and Heritage Council Australian Health Ministers' Conference, Canberra, Australia.



Closing the gap - EurepGAP accepts produce grown with recycled water

By Jane Lovell and Daryl Stevens

The EurepGAP (www.eurepgap.org) standard is primarily designed to maintain retailer and consumer confidence in primary production practices. In addition to food safety, EurepGAP also addresses the environmental impacts of farming operations, optimising the use of inputs and to ensuring a responsible approach to worker health and safety.

EurepGAP is:

- » a private sector body that sets voluntary standards for the certification of agricultural products around the globe.
- » an equal partnership of agricultural producers and retailers which want to establish certification standards and procedures for Good Agricultural Practices (GAP).
- » a pre-farm-gate-standard that means the certificate covers the process of the certified product from before the seed is planted until it leaves the farm.
- » a business-to-business label and is therefore not directly visible for the consumers.

EurepGAP members include retailers, producers/farmers and associate members from the input and service side of agriculture.

Jane Lovell and Tundra Howe from Tasmanian Quality Assured Inc (www.tqainc.com.au) recently attended the 7th EurepGAP conference where amendments to the EurepGAP protocol

were discussed. TQA took the opportunity to again raise the issue of use of recycled water and with the help of Daryl Stevens, National Coordinator for Recycled Water Development in Horticulture, provided information supporting the use of recycled water.

The soon to be released revision of EurepGAP will accept produce grown with recycled water as long as it complies with "...the local legislation for irrigation water". The interpretation of this is, if the relevant local government (State or Territory) authority approves the use of the water to be fit for the intended use (ie to grow the produce) the water complies with EurepGAP.

This make logical sense given the strict guidelines and QA practiced for recycled water schemes in Australia.



AWA Master Class: evaluating water recycling projects.

The recent AWA Masters Course in Brisbane was a great success with a full house and another course scheduled to be run in Sydney, 7-8 February 2007. Presenters in the Master Class examined:

- » The technical, environmental, legal and financial issues involved in deciding to develop a reuse scheme

- » The social and political issues that need to be addressed
- » How outcomes can be measured and benchmarked

Find out more about the next course at www.awa.asn.au/events/



Australia

ReWater is now publicly available in the PANDORA Archive

<http://pandora.nla.gov.au/tep/63766>
<http://pandora.nla.gov.au/index.html>

ReWater has been recognized as a National Significant Publication and the National Coordinator for Recycled Water Development in Horticulture Project (www.recycledwater.com.au) has recently (27 Sept. 2006) granted the National Library of Australia a copyright license to include ReWater in the PANDORA Archive. This license permits the Library to copy ReWater into the Archive and to retain it and provide online public access to it in perpetuity.

Access to ReWater in the Archive is facilitated in two ways: via the Library's online catalogue and via subject and title lists maintained on the PANDORA home page <http://pandora.nla.gov.au/index.html>.

Drought impact on farm production: \$6.2 Billion

www.abareconomics.com/publications_html/crops/crops_06/cr_drought_06.pdf

The Australian Bureau of Agricultural and Rural Economics (ABARE) has released a Drought Update which finds that the drought conditions are likely to have severe repercussions in terms of lost production and forced sales for the farming sector. The report forecasts the gross value of farm production of winter crops and livestock in 2006-07 to be down by 35% or \$6.2 billion below the value in 2005-06. On a positive note, the report notes that whilst conditions are considered to be worse than the 2002-03 drought and comparable to the 1982-83 drought, improved management practices have allowed growers to achieve relatively better production outcomes from limited rainfall.

Australia's water supply status and seasonal outlook – Nov 06

www.nwc.gov.au/publications/docs/SeasonalOutlook.pdf

August 2006 recorded the lowest August rainfall on record across Australia as a whole.

Much of southern Australia and coastal Queensland has experienced a protracted downturn in annual rainfall in combination with elevated temperatures, which started during the 1997 El Niño event. Such a prolonged period of drying is without precedent in the rainfall records of these areas.

During the past decade, we have witnessed record warm temperatures over large parts of Australia including almost all of the Murray-Darling Basin. Through the same period, demand for water has continued to grow and there has been pressure on

water availability in both the urban and rural sectors. When rainfall reduces and temperature rises, runoff reduces disproportionately. As a consequence water storages across most of southern Australia and coastal Queensland are at disturbingly low levels.

The National Water Commission has therefore assembled a special high level briefing on the national water supply situation and the seasonal outlook. It has been prepared utilising the combined resources of the Bureau of Meteorology, the Bureau of Rural Sciences and CSIRO, with additional input from the Murray-Darling Basin Commission and the Water Services Association of Australia.

No Significant rainfall relief until 2007?

www.bom.gov.au/announcements/media_releases/climate/ahead/20061026R.shtml

The Bureau of Meteorology (BOM) has released the National Seasonal Rainfall Outlook. Drier than normal conditions are predicted for southeast Queensland and much of New South Wales in November 2006 to January 2007. Below median rainfall has a 60 to 75% chance of occurring and El Niño conditions are predicted to persist for the rest of 2006.

Statistical analysis of irrigated farms

www.ausstats.abs.gov.au

The Productivity Commission (PC) and the Australian Bureau of statistics (ABS) have released a collaborative research publication which analyses recent ABS survey information to examine the characteristics of farms that use and trade water. The report found that "irrigated farms with a higher value of production were more likely to irrigate in successive years. These farms also incurred lower ongoing irrigation expenses relative to their irrigation water use and were more likely to recycle irrigation water and use irrigation scheduling equipment".

Waste eating membrane cleans water

www.smh.com.au/news/National/Membrane-takes-out-inventors-gong/2006/

The Sydney Morning Herald (SMH) reports that a newly-patented "membrane bio-reactor" that cleans waste water and sewage has won an invention award on ABC Television. The membrane was developed by Tony Taylor from the Australian Nuclear Science and Technology Organisation. Dr Taylor reportedly indicated that the membrane "literally ate and breathed air and was self-perpetuating". Reportedly, Dr Taylor further indicated that his invention had the potential to cut water use by up to 60%.

South Australia

New restrictions on the horizon

www.news.com.au/adelaidenow/story/0,22606,20469983-5006301,00.html

The record low level of River Murray storage systems will force the introduction of tough new water restrictions by 2007. Reportedly, the government plans to tighten restrictions from mid October, but it is likely that these restrictions will need to be made more stringent during summer. Administrative Services and Government Minister Michael Wright reportedly dismissed such reports saying there were as yet "no plans" for tougher restrictions.

SA leads water savings

www.news.com.au/adelaidenow/story/0,22606,20616667-5006301,00.html

ADELAIDE is at the forefront of water reuse in Australia, with 19% of all water consumed being recycled for other uses. Professor Beecham highlighted the need for awareness of the potential uses for water of varying qualities.

Victoria

Treated sewage in Melbourne water

www.news.com.au/heraldsun/story/0,21985,20469766-661,00.html

The Herald Sun reports that treated sewage discharged into one of the Yarra River's tributary creeks is pumped into Sugarloaf reservoir and in turn enters the water supply for Melbourne's northern suburbs. Water Minister John Thwaites reportedly delivered assurances that the water was safe for consumption and indicated that the practice was common around Australia. Mr Thwaites reportedly said that the water was "massively diluted so that by the time it gets into the drinking system there's no measurable trace of contaminants or recycled water".

Related articles:

www.abc.net.au/news/newsitems/200609/s1747841.htm
<http://abc.net.au/news/items/200609/1747674.htm?water>

Turnbull announces funding for Bendigo recycling project

www.malcolmturnbull.com.au/news/article.aspx?ID=576

Parliamentary Secretary to the Prime Minister with responsibility for water the Hon Malcolm Turnbull MP today announced the Australian Government will contribute \$6.3 million towards a major recycling project that will enhance Bendigo's water supply by 4300 megalitres.

New South Wales

Western Sydney recycling project consultation

www.deus.nsw.gov.au/News/News.asp#P12_2475

The environmental assessment for the massive Western Sydney Recycled Water Initiative is now on display for community comment until 2 December 2006. By 2015, the Western Sydney Recycled Water Initiative will provide billions of litres of recycled water to new homes, industry and irrigation and will replace water released from Warragamba Dam for environmental flows. The first stage of the initiative will be the implementation of the Replacement Flows Project. This will see up to 18 billion litres of recycled water replace flows currently released from Warragamba Dam into the Hawkesbury-Nepean River to maintain its health.

The project will involve connecting three sewage treatment plants at Penrith, St Marys and Quakers Hill and the transfer of wastewater to a new advanced water treatment plant. The new plant will treat the wastewater to a very high standard and reduce the nutrient levels in the Hawkesbury-Nepean River. The Environmental Assessment details plans to construct pipelines to connect the three sewage treatment plants, a wastewater pipeline from Seven Hills to Dundas and the construction of the advanced water treatment plant at St Marys. To find out more and to view the environment assessment, go to www.planning.nsw.gov.au and www.sydneywater.com.au.

Elizabeth Macarthur Agricultural Institute to receive recycled water

www.sydneywater.com.au/WhoWeAre/MediaCentre/MediaView.cfm?ID=343

Work has begun on an 8.5 kilometre pipeline to deliver recycled wastewater from West Camden Sewage Treatment Plant to Elizabeth Macarthur Agricultural Institute. The pipeline is part of a \$50 million upgrade currently underway at the West Camden plant. The recycled water pipeline will deliver up to five million litres of water each day to Elizabeth Macarthur Agricultural Institute for irrigation.

Moree recycled water scheme opens

www.deus.nsw.gov.au/News/News.asp#P12_2475

The \$1.5 million Moree Effluent Reuse Scheme has been opened. It was the final project to complete the larger \$6.26 million Moree Sewerage Scheme, and involved installing a pumping station and pipeline to carry treated effluent to local farms for irrigation of crops. Previously, the majority of the town's effluent was discharged into the river resulting in environmental degradation and the loss of a valuable resource to the Moree community. The NSW Government, through the Country Towns Water Supply and Sewerage Program, provided a total of \$3.3 million toward the cost of the project.

Ashley sewerage scheme opens

www.deus.nsw.gov.au/News/News.asp#P12_2475

The Ashley Sewerage Scheme has been opened. The \$2.1 million sewerage scheme includes an innovative vacuum sewerage network to collect wastewater from individual homes and low maintenance ponds to treat and dispose of the effluent by evaporation. The NSW Government provided \$1.3 million in financial assistance towards construction costs of the scheme, this being 61% of the total cost from its Country Towns Water Supply and Sewerage Program.

Major water recycling plant to be built on Central Coast for cooling of Power Station

www.deus.nsw.gov.au/News/News.asp#P12_2475

The NSW Government owned power generator Delta Electricity will build a large-scale recycling plant at its Vales Point power station, which will slash its town water consumption by 464 million litres per year. The new recycling plant will take effluent from the nearby Mannering Park Sewerage Treatment Plant and treat it to a very high quality for use in the power station. Delta's recycling plant, and its other water saving measures, will save the equivalent water use of 2,500 Central Coast homes. Although 99 percent of the water used at Vales Point is sea-water, this plant will reduce its town water use annual town water consumption from 721 million litres to 257 million litres. Tenders will be called to build the plant before the end of the year.

IPART determination on recycled water prices

www.ipart.nsw.gov.au

The Independent Pricing and Regulatory Tribunal (IPART) has released the final Determination of Pricing arrangements for recycled water and sewer mining. The determination will allow water agencies to partially recover the costs of recycled water schemes from customers not serviced by the schemes, provided that they can demonstrate that the scheme reduces the overall cost to the community. The Determination will apply from 1 January 2007 for Hunter Water and Gosford City Council; and from 1 July 2007 for Sydney Water and Wyong Shire Council.

Australia's largest water recycling scheme commissioned

Source: AWA Water News 17 Sept
www.sydneywater.com.au/WhoWeAre/MediaCentre/MediaView.cfm?ID=334

Australia's largest industrial water recycling scheme thus far was opened to produce very high grade water using a high grade reverse osmosis process. The landmark project will enable BlueScope Steel in Wollongong to save >7 GL/year. Once the commissioning of this groundbreaking facility is complete, a high proportion of wastewater flows from

the Wollongong, Bellambi and Port Kembla catchments will be recycled for use in the steel-making process at the BlueScope plant at Port Kembla.

Rouse Hill recycling plant expansion

www.sydneywater.com.au/WhoWeAre/MediaCentre/MediaView.cfm?ID=339

Sydney Water has awarded a contract to John Holland Pty Ltd to expand the nation's largest residential recycled water plant at Rouse Hill to allow a further 4.7 billion litres to be recycled annually. The design phase will take about six months to complete and construction will begin in early 2007 and is expected to be completed in late 2008.

Sydney Council considers reuse options

www.sydneywater.com.au/WhoWeAre/MediaCentre/MediaView.cfm?ID=339
www.sydneymedia.com.au/html/3072-city-uses-cross-city-tunnel-water-t
www.abc.net.au/news/newsitems/200610/s1764153.htm

The City of Sydney Council (CSC) has indicated that it will consider a \$2.3 million water reuse scheme to drought-proof city parks, and water trees and floral displays. Under the scheme, water seepage in the Cross City Tunnel and stormwater run-off would be collected and treated to supply Hyde Park and Cook and Philip Park.

Queensland

Deputy Premier officially launches key part of Water Grid

www.cabinet.qld.gov.au/mms/statementdisplaysingle.aspx?id=49139

Deputy Premier and Infrastructure Minister Anna Bligh today officially launched the Western Corridor Recycled Water project - a key part of the Government's South East Queensland Water Grid. The project includes the laying of approximately 200 km of underground pipeline and construction of three advanced water treatment (AWT) plants at Bundamba, Luggage Point and Gibson Island.

\$52 million towards the construction of water recycling

www.cabinet.qld.gov.au/MMS/StatementDisplaySingle.aspx?id=49076

The State Government today delivered on its commitment to secure Queensland's coastline by providing almost \$52 million towards the construction of water recycling and reuse infrastructure in the Mackay and Whitsunday region.

The Mackay Effluent Reuse and Water Recycling Scheme will reduce the amount of effluent released into the Great Barrier Reef and provide a positive benefit to farmers in the region. The Mt Basset Sewage Treatment Plant will be decommissioned and sewerage will be diverted to an upgraded facility at Bakers Creek where it will be treated before being used as a water supply for local crops. ▶ p. 10

► p.9

This will allow the region to re-use wastewater, secure a consistent water supply for local farms and reduce the environmental impact on the surrounding waterways.

\$80 Million for wastewater and recycled water plant

www.news.com.au/couriermail/story/0,,20607196-3102.00.html
www.goldcoast.qld.gov.au/t_news_item.aspx?pid=6328

The Gold Coast City Council (GCCC) has announced that construction has commenced on an \$80 million wastewater and recycled water plant in Pimpama Coomera. Under the project, which will eventually service 120,000 residents in a 7,000 hectare area, households will be fitted with dual-reticulation pipes; one providing potable water and the other recycled water. Recycled water will be used for toilet flushing and exterior uses, reducing potable water consumption by 84%.

Water restrictions in Central Tablelands

www.ctw.nsw.gov.au/water%20restrictions.htm

Central Tablelands Water (CTW) has announced that Level Four water restrictions are in effect from 1 November 2006 following a significant drop to 50% capacity at Lake Rowlands Dam. CTW further advises that should Lake Rowlands Dam reach 45% of capacity, Level 5 restrictions may need to be implemented.

Cubbie's vast dams run dry

www.abc.net.au/water/stories/s1767730.htm

ABC News reports that the dams of Cubbie Station in southern Queensland are at 1% of capacity despite having licenses to take more than 400,000 megalitres of water a year. Joint managing director John Grabbe reportedly blamed the drought conditions for the shortage, stating, "this is the sixth year that we've been drought-stricken here".

Tasmania

Pilot program targets farm water planning

www.media.tas.gov.au/release.php?id=19359

Water Minister David Llewellyn has announced a pilot program under the SMART Farming Water Initiative, which will provide \$3.1 million over the next three years to assist farmers in developing Farm Water Development Plans. Mr Llewellyn said "the outcomes from the pilot will then be used to assess how to refine the framework for the development of farm water development plans on a commercial basis over the next three years".

Western Australia

Economic Regulation Authority Water Report released

www.era.wa.gov.au/water/library/Water%20Wastewater%20and%20Irrigation%20Performance%20Report%202005.pdf

The Economic Regulation Authority (ERA) has released the 2005 Water, Wastewater and Irrigation Performance Report. The report evaluates water and wastewater data supplied by the Water Corporation and various small suppliers of water, wastewater and irrigation services in regional areas with a view to providing a benchmark of water service delivery.

Australian Capital Territory

Free recycled water

www.chiefminister.act.gov.au/media.asp?media=1865§ion=24&title=Media%20Release&id=24

ACTEW is to install equipment that will give the Government and the private sector access to free recycled water for construction, road works, irrigation of parks and other major works.



Australia

AWA Applied Membrane Workshop on recycled water

<http://www.awa.asn.au/Content/NavigationMenu2/Education/NationalInterestEvents/bDec06bAppliedMembranesWorkshop/AppliedMembranes.pdf>

Start date: 1/12/2006 Sydney, NSW

The formal proceedings for the day will focus on technical issues associated with industrial and municipal wastewater treatment and reuse, particularly in the context of the emphasis on water recycling as high priority for governments and water utilities.

AWA Master Class: evaluating water recycling projects.

www.awa.asn.au/events/

Start Date, 7/2/07. Presenters in the Master Class will examine:

- » The technical, environmental, legal and financial issues involved in deciding to develop a reuse scheme
- » The social and political issues that need to be addressed
- » How outcomes can be measured and benchmarked

Water Recycling for Agricultural and Horticultural Applications

www.iwes.com.au/pdf/Sydney%202007%20Interactive%20Brochure.pdf

Start date: 12/2/2007 Sydney, NSW

IWES will be running in Sydney from February 12-15, 2007. The event includes 11 courses in water and wastewater treatment, environmental management, and biosolids management.

AWA Membranes Specialty Conference

http://www.awa.asn.au/AM/Template.cfm?Section=Feb_07_b_Membranes_Specialty_Conference_II_b_&Template=/CM/ContentDisplay.cfm&ContentID=4254

Start date: 21/2/2007, Melbourne, Vic

Membranes Specialty Conference II in February 2007 aims to further strengthen these links and highlight some of the latest technologies in membrane fabrication, research on membrane bioreactors for various industries and developments in water recycling and reuse. Papers will focus on case studies and projects where system design and planning for wastewater treatment yields a final, finished product ideally suited for immediate downstream use within the same industry or on-sale.

Oz Water 07 Water Recycling for Agricultural and Horticultural Applications

www.awaozwater.net/o7

Start date: 4/3/2007, Sydney, NSW

This conference addresses major national reforms, climate change and its possible impacts, advances in technology, the research agenda, the challenge of human resources for the industry, iconic projects, water reuse, desalination, water accounts, monitoring and more.

NSW 3rd AWA Water Reuse and Recycling Conference

www.reclaimedwater.com.au/uploads/File/AWA%20WaterReuse07%20sm.all.pdf

Start date: 16/7/2007 Sydney, NSW

Program includes:

- » Planned and Unplanned Indirect Potable Recycling
- » Public Health Impact Assessment and Protection
- » Environmental Impact and Assessment
- » New and Emerging Water Treatment Technologies
- » Public Perception and Stakeholder Communication
- » Water Quality Monitoring
- » Energy and Sustainable Water
- » Management Institutional and Economic Drivers and Impediments
- » Novel Applications of Water Reuse Potable Water Replacement
- » Environmental Flow Replenishment





Good reads

NRMMC and EPHC (2006) Australian Guidelines for Water Recycling.

www.ephc.gov.au/ephc/water_recycling.html

Managing Health and Environmental Risks. Phase 1. National Water Quality Management Strategy 21. Natural Resource Management Ministerial Council. Environment Protection and Heritage Council Australian Health Ministers' Conference, Canberra, Australia.

IAA (2006) 'Best practice Guidelines for Urban irrigation. Part 1.'

www.irrigation.org.au/download/standards/Home%20Gardener%20FINAL%20web.pdf

Your Guide to Good Garden Watering.' Irrigation Association of Australia.

IAA (2006) 'Best practice Guidelines for Urban irrigation. Part 2.'

www.irrigation.org.au/standards.html#qi_stds_03

Urban Best Management Practice Guidelines.' Irrigation Association of Australia.

About ReWater

This newsletter, ReWater, has been designed to make information relevant to reclaimed/recycled water use in horticulture more accessible to horticulturalist (growers/farmers), the water industry and other interested people. It is part of the service provided by the National Coordinator for Recycled Water Development in Horticulture (www.recycledwater.com.au), funded through Horticulture Australia.

Back issues and instructions for subscribing to receive ReWater electronically quarterly can be accessed at www.recycledwater.com.au/newsletter.php

We would appreciate your feedback and suggestions for contributions. Please email to rewater@arris.com.au or contact us on 08 8303 6706.

The delivery of research and development outcomes from this project to the horticultural industry is made possible by the Commonwealth Government's 50 % investment in all Horticulture Australia's research and development initiatives.

Edited and designed by Arris Pty Ltd



ACN. 092 739 574

DISCLAIMER: Every attempt is made to ensure the accuracy of all statements and claims made in ReWater. However, due to the nature of the industry, it is impossible for us to know your precise circumstances. Therefore, we disclaim any responsibility for any action you take as a result of reading ReWater.

issn 1449-9800