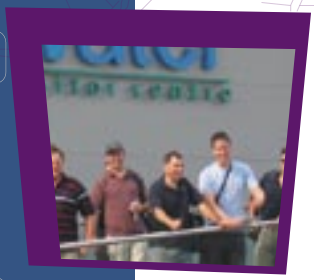
rewater

farming with recycled water



Recycled Water Study Tour visits Singapore, Mexico, Florida and California

Dr Anne-Maree Boland - DPI Vic
Dr Daryl Stevens – Arris Pty Ltd

As part of the Horticulture Australia Limited project, Coordinator of Reclaimed Water Development in Horticulture, Arris Pty Ltd recently led a Recycled Water Study Tour to Singapore, Mexico and the USA. The tour was designed to explore the successful and sustainable development of recycled water use, both nationally and internationally. Participants studied agricultural/ horticultural, potable, industrial, domestic, municipal, recreational and environmental uses of recycled water. The water authorities and recycled water scheme operators at each site guided participants through their Wastewater Treatment Plants (often referred to as Water Reclamation Facilities) and recycled water schemes. They provided valuable insights into the development, commissioning, operation, management and communication programs associated with specific reuse schemes. Other areas of interest included wider public communication strategies and education, risk management for water authorities, regulatory issues and frameworks for the establishment of these schemes.

continued page 2

edition August 2005

A product of the Coordinator Reclaimed Water Development Horticulture project. Funded by Horticulture Australia Limited. *Know-how for Horticulture™*

contents

features

events

press round up

From the editor

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

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

If you would like to receive a copy of ReWater electronically, email us at rewater@reclaimedwater.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 Reclaimed Water Development, Horticulture.

Daryl Stevens
rewater@reclaimedwater.com.au
T 08 8303 6707
M 0418 802 621

from page 1

Below is a brief summary of each country and state visited.

Singapore

The NEWater water reclamation study was initiated in 1998 to determine the suitability of using NEWater as a source of raw water to supplement Singapore's water supply. NEWater is treated sewage water that has undergone a stringent purification and treatment process using dual-membrane (microfiltration and reverse osmosis) and ultraviolet technologies. NEWater can be mixed and blended with reservoir water and then undergo conventional water treatment to produce drinking water (ie. Indirect Potable Reuse). The tour included a visit to the NEWater visitor centre, which is a state of the art facility aiming to educate the community on the importance of water conservation and recycling. The tour also visited urban stormwater catchment facilities and a potable water treatment plant.

Key observations:

- The focus on communication and education was impressive, if not 'fantastic'.
- Consistent vision and leadership was important for the successful implementation of the NEWater scheme.

Study tour participants in front of NEWater visitor centre and water factory.

United States of America - Florida

The reuse of treated water (reclaimed water in Florida) has been occurring since the 1980s with the major driver being reduced outflows of effluent into the sea. Since that time the use of recycled water has rapidly increased to approximately 800 GL/y in 2003. Most of this water is used for landscape irrigation (45%) with other uses including industrial (16%), agriculture (16%), groundwater recharge (15%), and wetlands and other (8%). Many examples of urban irrigation, golf courses and parks were observed. In addition, a groundwater recharge facility, citrus orchard, nursery and industrial sites (cooling towers and electricity generation plant) were visited. A number of water reclamation facilities were visited to understand the treatment processes and regulatory frameworks that are employed.

continued page 3

from page 2

Key observations:

- The use of recycled water for agriculture is minimal and declining as the population increases and agricultural land is developed
- Orchard and irrigation management practices were variable as many owners waited for the land to be developed for residential uses
- Landscape irrigation is likely to increase as housing developments flourish
- Nursery producers were efficiently managing recycled water
- Water conservation is not apparent, rather the community focus is on using the recycled water resource, but not addressing the 'how efficiently' aspect
- Partnerships have been established to actively promote the use of recycled water
- Recycled water is perceived as a normal activity by the community
- Recycled water is never plumbed into the house for toilet flushing, etc as this is considered too high risk

United States of America - California

California has been a water recycling pioneer, beginning in the 1960s. The adoption of recycled water projects has probably been driven from a water conservation perspective with reduced discharge a secondary driver. Recycled water use in 2003 was approximately 700 GL with a capacity to reuse 2,000 GL/yr based on existing water reclamation plants. Agricultural production is a significant user of recycled water (47%) with landscape irrigation (21%), groundwater recharge (9%) and industrial use (5%) being lesser users. The tour included visits to reclamation facilities, and observations of end uses including the Groundwater Replenishment System in Orange County, the development of urban irrigation, golf courses and parks and the Monterey agricultural region. Alternative uses observed included car washes, aged care laundry facilities and government institutions (eg prisons).

Key observations:

- Agriculture has played an important part in the development and acceptance of recycled water schemes
- Experimental trials were undertaken for 5 years in Monterey at significant cost; this was prior to growers being asked to use recycled water
- Water is tending to move to those who can pay – eg affluent urban societies; the question is then raised - how does agriculture protect its recycled water resources?

Artichoke grown with recycled water from the MRWPCA Water Recycling Plant, Salinas Valley, California.

Mexico

Cities in Mexico are rapidly developing with considerable focus on the quality and quantity of its water resources. Industrial use of recycled water is the key focus of the Federal Government. Two key industrial sites were visited – an oil refinery that uses recycled water in its cooling towers and an electrical power plant that uses recycled water in the cooling towers and reverse osmosis treated water for steam generation water.

Key observations:

- There are many opportunities for use of recycled water in industry
- Industry generally has the ability to pay for the quality of water required for the end use as long as it is 'fit-for-purpose'
- At present, environmental considerations seem secondary to industrial development

More information on all the sites visited by the Study Tour will be available in the next ReWater edition.

continued page 4

Nursery and pot with dripper water system (insert); Hermann Engelmann Greenhouses – Apopka, Florida.

from page 3

Arris Pty Ltd would like to thank the 20 participants who attended this study tour for their enthusiastic participation and valued contribution to what will provide them, and Australia, with a valuable insight into recycled water projects in a range of countries around the world. These participants represented the key water management sectors in Australia including urban and rural water authorities, private water distribution companies, EPAs, and Government departments of Environment and Agriculture. We also recognise the invaluable contribution of a range of individuals from water industries in Singapore, Mexico, Florida and California, who gave our study tour participants the time to discuss and show us some of the most fascinating and innovative recycled water projects in the world.

This is a product of the Coordinator Reclaimed Water Development Horticulture project, funded by Horticulture Australia Limited. 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.

Large areas of lettuce, celery and artichoke in the Salinas Valley cropped with recycled water.

The Campaspe water reclamation scheme launched

www.earthtech.com.au/news.050520.htm

Treasurer and Minister for State and Regional Development The Hon. John Brumby, officially launched the $40 million Campaspe Water Reclamation Scheme in Echuca, Victoria (May 2005).

Coliban Water and Earth Tech worked together to deliver outstanding environmental and customer outcomes for the region. The Scheme provides additional wastewater treatment capacity to Echuca and surrounding townships and overcomes environmental problems experienced with the former lagoon-style treatment plants in Echuca.

Barry Norman, Earth Tech Managing Director, said the scheme is a milestone public-private partnership for Victoria. Earth Tech's successful delivery of the project demonstrates the effectiveness of this approach for maintaining vital community infrastructure.

Earth Tech designed and built the new high-tech Echuca treatment plant and the reclaimed water pipeline distribution network, which it will own and operate for 25 years in partnership with Coliban Water.

The scheme provides local farmers with 8 million litres (ML) per day of high quality Class B recycled water, which is fit-for-purpose for dairy pastures and crops including tomatoes and grape vines.

"By recycling water, we're helping sustain the land and providing additional water to local farms during a period of prolonged drought," said Mr Norman.

The scheme also provides long-term savings for the community, Coliban Water and local trade waste customers by introducing best practice waste minimisation and Environment Protection Authority Cleaner Production Strategies.

Gordon McKern, Coliban Water Chairman, said Coliban Water is leading the way using public-private partnerships to deliver projects to the North Central region.

"This process brings us cutting-edge innovation, world's best practice, great technical solutions and financial benefits," said Mr McKern. "I think it's an excellent way of doing projects that deliver real benefits to the local community".

As part of the implementation plan for the project, major trade waste customers have been active in implementing Cleaner Production Strategies with the support of the EPA and Coliban Water. Their trade waste has been minimised three-fold through: using cleaner production methods to reduce the amount of waste overall; employing water conservation in their production to reduce the volume of the waste; and installing trade waste pre-treatment equipment to reduce the load of trade waste before it goes to the Water Reclamation Plant.

8th International River Symposium

September 6-9, 2005. Brisbane, QLD.

The 8th International River Symposium will be held at Brisbane's Convention Centre from 6-9 September 2005. It's the place to be for water professionals, students, educators and conservationists. Other activities include Riverfire, Riverfeast and pre-symposium study tours. For further information, booking and registration details visit: www.riversymposium.com

20th Annual WateReuse Symposium

September 18-21, 2005. Denver, USA.

The 20th Annual WateReuse Symposium is fast approaching and is shaping up to perhaps be the biggest and best Symposium held to date. The hotel room block is filling up quickly, so book your room right away. The conference takes place at the Grand Hyatt Denver on September 18-21, 2005 with the theme, Water Reuse & Desalination: Mile High Opportunities.

The WateReuse Association is adding additional hotel room blocks for anyone unable to reserve a room at the Hyatt and will post this information on the Symposium web page at www.WateReuse.org/2005Symposium/ as soon as it is available.

The 2005 Symposium, which is co-sponsored by the American Water Works Association and the Water Environment Federation, features more than 110 papers, technical tours of nearby water reuse projects, and a new interactive session titled: Is Reclaimed Water Safe? The technical program, as well as registration and hotel information is available on the Symposium web page at www.WateReuse.org/2005Symposium/. A number of opportunities still exist for exhibitors and sponsors. An exhibitor prospectus and sponsorship flyer are available on the Symposium web page.

On-site '05 Conference

September 26-30, 2005. Armidale, NSW.

Theme "Performance Assessment for On-site Systems: regulation, operation and monitoring" to be held at the University of New England, Armidale NSW.

International keynote speaker Dr Richard Otis, from Ayres Associates, Wisconsin USA, will lead three other keynote speakers: Ted Gardner, Department Natural Resources and Mines, Queensland; John Lawrey, EWS Environmental in Melbourne, ex VicEPA; and Andrew Dakers, ecoEng Limited, Christchurch NZ.

Details of the conference and a printable brochure are available at: www.lanfaxlabs.com.au/onsite05 or by contacting the coordinator, Dr Robert Patterson: rob@lanfaxlabs.com.au

Reclaimed Water Conference to be held in Spain

October 19-20, 2005. Monterrey, Lloret de Mar (Girona), Spain.

The Consorci de la Costa Brava (CCB) is presenting a technical workshop in Spain called "The Integration of Reclaimed Water in Water Resource Management: The Fostering Role of the Territorial Region." The goal of the workshop is to analyse the progress and the future perspectives that the integrated management of reclaimed water can provide in different areas of Spain, while fostering the role of users, planners, and funding partners. The workshop will be held October 19-20 in the Guitart Gran Hotel Monterrey, in the municipality of Lloret de Mar (Girona). For more information, visit www.ccbgi.org/jornades2005/english/index.htm

International Conference on Water Resources Issues

December 26-28, 2005. Alexandria, Egypt.

The Egyptian Water Resources Association (EWRA) has issued a call for papers for the First International Conference on Water Resources in the 21st Century. The conference topics include water reuse, water supply and demands, river basin management, and more. The conference will present the more recent technological and scientific developments associated with the management of surface and subsurface water resources.

The meeting will be held December 26-28 in Alexandria, Egypt in partnership with Bibliotheca Alexandrina, Egypt; Wessex Institute of Technology, UK; Desert Research Institute, USA; Disaster Control Research Centre, Japan; and the Water Research Centre, Egypt. For more information, visit www.ewra.com/pages/2005/contents.htm

Australia

Advancing water recycling in Australia

www.aph.gov.au/library/pubs/rb/index.htm

Federal Parliamentary Library Research Brief by Dr Sophia Dimitriadis has been released. Titled, 'Issues encountered in advancing Australia's water recycling schemes', the paper seeks to provide a commentary on some challenges, opportunities and benefits of water recycling schemes in Australia. In parts suggesting that, 'Only selected agricultural industries could afford to pay the costs involved in treated water'. Quoting "The gross margins for selected crops with regard to the ability to pay for water are a major issue in relation to treated water. By and large, we believe we can treat the water for about $300 per megalitre … So you do have a problem with what you can pay. Generally speaking, it is wine grapes, apples and other intensive agriculture that can afford recycled water."

(from www.aph.gov.au/house/committee/primind/waterinq/report.htm)

Alice Springs water reuse scheme - environmental assessment report

From LAWLEX Water Newsfeed 12/8/05

www.lpe.nt.gov.au/enviro/ASWRS_2005.pdf

The Department of Planning and Infrastructure (DPI) has released, online, an Environmental Assessment Report and Recommendations (June 2005) on a proposal by Power and Water to develop a water recycling scheme for Alice Springs. The scheme aims to support up to 1,800 megalitres of wastewater per year for reuse in irrigation. The DPI said the Soil Aquifer Treatment and Horticulture schemes can be managed in an environmentally acceptable manner, subject to conditions.

New heights for Mt Hotham (Victoria) with recycling project

From LAWLEX Water Newsfeed 5/8/05

www.dpc.vic.gov.au/domino/Web_Notes/newmedia.nsf/8fc6e140ef55837cca256c8c00183cdc/b2f348ec7ac9dee5ca257050000248d2?OpenDocument

In a partnership between the State Government, the Mt Hotham Ski Company and the Mt Hotham Resort Management Board, the ski resort will use Class A treated wastewater for snow making from 2008 onwards. Water Minister John Thwaites said this would reduce the amount of fresh water taken from Swindlers Creek for use at Mt Hotham by 80 to 110 million litres a year. The Victorian Water Trust will contribute $4.18 million to the $8.36 million scheme.

continued page 7

Australia

from page 6

EPA advice on managed aquifer recharge using treated wastewater

From LAWLEX Water Newsfeed 5/8/05
www.epa.wa.gov.au/docs/2072_MAR%20section%2016e%20advice%20DRAFT%2025705.pdf

The Environmental Protection Authority (EPA) has released Draft Strategic Advice on Managed Aquifer Recharge using Treated Wastewater on the Swan Coastal Plain (25 July 2005). Comments on the draft report should be emailed to Melissa Bromly by 22 August 2005.

Agricultural wastewater treatment development

From LAWLEX Water Newsfeed 27/7/05
www.ebcrc.com.au/media/18July2005.htm

The Environmental Biotechnology Cooperative Research Centre (EBCRC) has announced that researchers have successfully developed technology that enables the environmentally friendly removal of high levels of nitrogen and phosphorus from agricultural wastewater.

Goulburn's water plan

From LAWLEX Water Newsfeed 21/7/05 and 9/6/05
www.goulburn.nsw.gov.au/roads/3014/3018.html

The Goulburn Mulwaree Council (NSW) has applied to the National Water Commission for funding of the Goulburn Mulwaree Council Sustainable Cities Project, as reported in last week's Water Newsfeed. This project involves indirect potable re-use: the Council is seeking $32 million to return reclaimed effluent to the Sooley Dam catchment.

Goulburn's useable water supply is dangerously low at 9.3 per cent capacity (week ending 29 May 2005).

Toowoomba seeks federal funding for water plan

From LAWLEX Water Newsfeed 21/7/05
www.toowoombawater.com.au/images/stories/briefing_paper_1july.pdf
www.toowoombawater.com.au/

Toowoomba City Council has also lodged a submission for funding with the National Water Commission "for a project that will help secure a safe supply of water to meet the future needs of Toowoomba and the region". The $68 million project includes installing additional bores and building a water reclamation plant.

For further information on the project please refer to Toowoomba City Council's Briefing Paper (1 July 2005) and the new Water Futures - Toowoomba website.

Like Goulburn, "Toowoomba's plan involves indirect potable re-use". Roughly 5,000 million litres of wastewater will reportedly be purified to six-star quality, pumped to Cooby Dam, and piped to residents.

Desalination plant powered by wind

From LAWLEX Water Newsfeed 21/7/05
www.theaustralian.news.com.au/common/story_page/0,5744,15934574%255E30417,00.html

The Australian reports that Griffin Energy and Queensland's Stanwell Corporation are tipped to win a $30 million contract to build facilities that will provide wind-powered energy for Western Australia's $380 million Kwinana desalination plant. The companies will reportedly erect 50 wind turbines at Emu Downs, about 200 kilometres north of Perth.

continued page 8

Australia

from page 7

Australian water and other social trends

From LAWLEX Water Newsfeed 21/7/05
www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/Lookup/D3D7FAA735DDA645CA25703B00774A0B/$File/41020_2005.pdf

The Australian Bureau of Statistics (ABS) has released a new report on Australian Social Trends (12 July 2005). The report presents information on "contemporary social issues" such as household water use and conservation. The report reveals that in 2004, 90% of households reported conserving water by using a water saving device and/or by undertaking a water conservation practice.

Irrigators praised for water management

From LAWLEX Water Newsfeed 14/7/05
www.clw.csiro.au/publications/general.html

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) has released research findings that "water management practices employed by the Murray and Murrumbidgee basins' $3.1 billion irrigation industry have substantially improved over the past decade".

Implications of potential climate change for Melbourne's water resources

From AWA Water News for week ending 10 July 2005
www.melbournewater.com.au/content/library/news/whats_new/Climate_Change_Study.pdf

A new CSIRO Report commissioned in 2003 has found that increases in temperature could cause up to a 35% fall in water flowing to its reservoirs by 2050 and demands more drastic measures be introduced for saving water including desalination and more wastewater reuse.

Trends in agriculture report

From AWA Water News for week ending 10 July 2005
www.pc.gov.au/research/crp/agriculture/index.html

The Productivity Commission has released a long awaited report, 'Trends in Agriculture', but there is little mention of the effects of drought and water shortages on the profitability or sustainability of agricultural production in the long term.

One billion dollar recycled water scheme

From AWA Water News for week ending 10 July 2005
www.gippswater.com.au/ Downloads at base of page

Melbourne Water & Gippsland Water have begun a feasibility study into a proposed $1 billion water recycling scheme to pipe treated sewage more than 135 kms from Melbourne's Eastern Treatment Plant to the Latrobe Valley, potentially reducing sewage discharge into Gunnamatta Bay by about 80%.

Werribee water recycling projects announced

From LAWLEX Water Newsfeed 7/7/05
www.dpc.vic.gov.au/domino/Web_Notes/newmedia.nsf/8fc6e140ef55837cca256c8c00183cdc/0c2422bb7bd1a92cca2570300004aade?OpenDocument

Acting Premier of Victoria, John Thwaites, has announced the completion of a $160 million upgrade of the Western Treatment Plant in Werribee (Vic). The Plant processes over half of Melbourne's wastewater. Mr Thwaites has also opened a new water recycling treatment plant at the same site to complement the upgrade.

Mr Thwaites also announced that "these developments will initially lead to the supply of Class A recycled water to 10,500 households at Manor Lakes, Bluestone Green and Werribee Fields".

Water appliance labeling scheme begins

From AWA Water News for week ending 3 July 2005
www.deh.gov.au/minister/env/2005/mr01jul305.html

The voluntary Appliance Labeling Scheme (Water Efficiency Labelling and Standards – WELS), one of a comprehensive raft of measures to save water under the $2 billion Australian Water Fund, began on 1 July. It follows the launch of the Commonwealth $200 million Community Water Grants.

Recycling made easy for Canberrans

From LAWLEX Water Newsfeed 30/6/05
www.perpetualwater.com.au/

Canberra's City News reports that Perpetual Water-Home™ - a "revolutionary new water system that turns grey water blue" - has been released for installation in new and existing Canberra homes. Perpetual Water reportedly treats water to Class A standard, "providing a never-ending source of water for gardens, lawns, laundry, toilets, and more". Managing Director John Grimes reportedly predicts that "within five years all houses built in Australia will have on-site water recycling".

Wastewater treatment report for Northern Territory

From LAWLEX Water Newsfeed 17/6/05
www.powerwater.com.au/powerwater/docs/wastewater/wastewater_treatment_reuse_discharge_04.pdf

Power and Water has released its first public report on wastewater treatment and reuse throughout the Northern Territory, entitled Wastewater Treatment, Reuse and Discharge 2004.

continued page 9

Australia

from page 8

MidCoast water re-use scheme hailed a success

From LAWLEX Water Newsfeed 30/6/05
http://taree.yourguide.com.au/detail.asp?class=news&subclass=local&category=general%20news&story_id=402589&y=2005&m=6

The Manning River Times reports that the "Taree area's re-use of treated water has been used as an example to other water-starved regions, during a national conference in Canberra". MidCoast Water, the local water and sewerage authority, had reportedly achieved 95 to 100% re-use for three of its sewerage treatment plants. MidCoast Water's General Manager Neil Hanington reportedly told the conference about "another scheme that, within 12 months, will allow us to reclaim 1000 megalitres a year for agricultural land".

Recycled water system for Mawson Lakes

From LAWLEX Water Newsfeed 24/6/05
www.premier.sa.gov.au/MediaSearch.asp?Action=Search&choice=News&id=2788

Launching the Mawson Lakes Recycled Water System in Adelaide's north, Environment Minister John Hill said the $16 million system is "the first of its kind in an Australian inner urban development in the way it delivers recycled water". Mr Hill said it "delivers a mixture of highly treated wastewater from SA Water's Bolivar Waste Water Treatment Plant and stormwater harvested in Salisbury that has been cleansed and treated, through a series of engineered wetlands to the Mawson Lakes development site". The system is projected to halve potable water use at Mawson Lakes, and save 800 megalitres per annum from being drawn from the River Murray.

New software measures water

From LAWLEX Water Newsfeed 7/6/05
www.abc.net.au/news/newsitems/200506/s1384139.htm

ABC News reports that new software has been developed to measure on-farm water use as well as seepage and evaporation.

Gold Coast reclaimed water scheme launched

From LAWLEX Water Newsfeed 7/6/05
http://statements.cabinet.qld.gov.au/cgi-bin/display-statement.pl?id=6975&db=media
www.goldcoast.qld.gov.au/t_news_item.asp?PID=4826

Environment Minister Desley Boyle has announced the launch of a $30 million Gold Coast reclaimed water scheme, which would give local agricultural irrigators access to recycled water, and ultimately reduce wastewater run-off to the Albert River. Ms Boyle said five cane farmers and one local palm grower have signed up to the scheme, which forms part of Gold Coast City Council's Northern Wastewater Strategy.

New water treatment plant

From LAWLEX Water Newsfeed 2/6/05
www.dpc.vic.gov.au/domino/Web_Notes/newmedia.nsf/8fc6e140ef55837cca256c8c00183cdc/73da6d8b8e3526ccca2570110005a48c?OpenDocument

State and Regional Development Minister John Brumby has commissioned a new $2 million water treatment plant. Mr Brumby said the plant "will convert around 30 per cent of Hamilton's wastewater into recycled water", to be used at Iluka's new Mineral Separation Plant in Hamilton.

Ballarat North water reclamation project

From LAWLEX Water Newsfeed 27/5/05
www.chw.net.au/smartcycle/update.html

Central Highlands Water (CHW) plans to develop a water reclamation plant at the Ballarat North Wastewater Treatment Plant "that will provide reclaimed water at a quality suitable for a range of potential reuse applications, including urban, public and agricultural applications". Following the Treasurer's approval, they have formally released the Expression of Interest Brief (20 May 2005). The period for lodging an Expression of Interest closed on 1 June 2005.

Support for large-scale water recycling – Sydney, NSW

From LAWLEX Water Newsfeed 12/5/05
www.deh.gov.au/minister/ps/2005/psmr05may05.html

Parliamentary Secretary for the Environment Greg Hunt supports Services Sydney's proposal, which involves accessing Sydney Water's sewers and pipelines to divert a proportion of the city's waste to a recycling plant. Mr Hunt called for Sydney to "invest in sewage treatment plants that can recycle this waste and produce usable water for industry and agriculture".

continued page 10

from page 10

Federal funding for recycled water pipeline – Darling Downs, Qld

From LAWLEX Water Newsfeed 12/5/05
http://fw.farmonline.com.au/news_daily.asp?ag_id=25913&s=17134

Farmonline has announced federal funding of $506,000 for a feasibility study on the proposed Brisbane to Darling Downs recycled water pipeline. Federal Member for Maranoa, Bruce Scott reportedly said the project "has the potential to deliver 85,000 megalitres into the Condamine and Balonne River system every year, to assist existing and future agricultural industry developments".

Federal funding sought for recycled water pipeline

From LAWLEX Water Newsfeed 14/7/05
www.abc.net.au/news/newsitems/200507/s1408964.htm

ABC News reports that proponents of a proposed Brisbane to Darling Downs recycled water pipeline are seeking funding under the Federal National Water Initiative after failing to garner Queensland Government support.

Overseas

Foundations laid for Singapore's largest NEWater factory (producing potable recycled water)

www.pub.gov.sg/NEWater

The foundation for the construction of Singapore's largest NEWater factory laid. Earlier this year, KIE was awarded the 20-year Design-Build-Own-Operate (DBOO) contract by PUB.

When completed in end 2006, the factory will be able to produce 116,000 m3/day of NEWater and 46,000m3/day of Industrial Water to meet the demand from the industrial and commercial sectors in the western and central regions of Singapore.

Although the quality of NEWater to be produced will meet international standards for potable or drinking water, it will largely be for industrial use in Singapore with a small amount flowing into reservoirs for indirect potable use.

Florida DEP publishes reuse inventory

From Reuse News 29/7/05
www.dep.state.fl.us/water/reuse/inventory.htm

The Florida Department of Environmental Protection has released its Annual Reuse Inventory Report. The report includes summary data on reuse facilities, reuse activities, capacity and flow ratios, and more. The report shows that Florida has had a steady increase in water reuse over the past 18 years. For example, from 2003 to 2004, there was a 13.6% increase in the number of residences irrigated, a 3.7% increase in the number of golf courses irrigated, a 4.5% increase in the number of parks irrigated, and a 5.6% increase in the number of schools irrigated. The full report is available online.

Indirect potable reuse considered in San Diego

From Reuse News 29/7/05
www.signonsandiego.com/news/metro/20050715-9999-1n15tap.html

Community leaders in San Diego have endorsed a plan to recycle treated wastewater for eventual use in local homes, according to the San Diego Union-Tribune. The plan advocates piping highly treated wastewater into the San Vincente Reservoir where it would be mixed with water from the Colorado River or Northern California, and then treated again for home delivery. This review is part of a $900,000 study that the City Council commissioned last year. If approved, this proposal would cost the city $210 million to implement. The matter has now moved to the City Council's Natural Resources Committee.

Websites

DAFF guidelines on planning and implementing recycled water schemes

www.maff.gov.au/releases/05/05015pm.html

New guidelines have been produced under the Water Savings Project funded by the Natural Heritage Trust. Their purpose is to help proponents of recycled water schemes for horticulture to adopt, together with other stakeholders, a holistic and inclusive framework in which to plan and implement such schemes.

We trust you find the guidelines useful.
They can be downloaded at:
http://www.daff.gov.au/waterguidelines_hort
or you can request further copies by telephoning 02 6272 5120.

Water Savings Project
Natural Resource Management Division
Australian Government Department of Agriculture, Fisheries and Forestry

WERF report on Endocrine Disrupting Compounds (EDCs)

WERF has created a four-page fact sheet on EDCs from a recent technical brief. Composed in Q&A format, this quick guide answers common questions concerning EDCs. Treatment facilities should find it useful in educating staff members, as well as concerned members of the community. The Technical Brief supports the conclusions of the fact sheet and provides references. Both documents were prepared in response to concerns over the potential for EDCs to enter the environment in treated wastewater discharges and from the land application of biosolids. A PDF version of the Technical Brief can be downloaded from www.werf.org/downloads/pdfs/04WEM6.pdf and is free to WERF subscribers.

A PDF version of the Fact Sheet is available at www.werf.org/pdf/04WEM6a.pdf

Guidelines for the safe use of wastewater in agriculture.

The draft 'WHO Guidelines for the safe use of wastewater in agriculture', Water, Sanitation and Health Protection of the Human Environment Department, World Health Organization, Geneva can be found at: www.iwahq.org.uk/documents/reuse/WHOAGRIGuideDraft.pdf

Other good reads

Water Reuse News

Water Reuse News: The latest news on water reuse and desalination
www.watereuse.org/news/wrnews_081805.htm
www.watereuse.org/news/wrnews_072905.htm
www.watereuse.org/news/wrnews_062205.htm

Water news

Horticulture Australia's Water Initiative - Ensuring Ongoing Access to Water for Horticulture', Water News, has been updated for July 2005. Please refer to the Water Initiative web pages at:
www.rmcg.com.au/HAL1.html

Contaminants of concern in water - Proceedings

CDROM Proceedings from AWA Specialty Conference Contaminants of Concern in Water are available at:
bookshop@awa.asn.au

Water recycling conference, Brisbane, 2003 - Proceedings

CDROM Proceedings from the 1st and 2nd Water Recycling Conference, 2003 in Brisbane are available as 2 CDs at: bookshop@awa.asn.au.

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

issn 1449-9800