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## 10 years of recycled water use at Water Infrastructure Group's Virginia Pipeline Scheme

*Ten years of irrigating fresh vegetables with recycled water in Australia*

Water Infrastructure Group's Virginia Pipeline Scheme in Adelaide celebrates 10 years of operations this month. The Scheme commenced operations in October 1999 and was Australia's first major water recycling scheme to irrigate over 20 different crops, including many fresh vegetables. Today, the scheme remains Australia's, and one of the world's, largest high-quality water recycling initiatives of its kind. Since it began, the scheme has provided farmers with over 100GL of Class A recycled water fit for the purpose of irrigating food crops which can be eaten raw, during a period which has been one of the driest on record in some parts of Australia.

The success of the Virginia Pipeline is invariably linked to the cooperative nature of the scheme; a public-private partnership between the Virginia Irrigation Association (representing market gardeners and other irrigators), SA Water and Water Infrastructure Group (a private sector subsidiary of Tyco International). Tony White of Water Infrastructure Group, said, "This year Water Infrastructure Group expanded the scheme into the Angle Vale area delivering an additional 16ML/D of Class A recycled water to 60 new customers who now look forward to a secure future for their businesses." With a \$19m capital cost, and the recent Angle Vale extension which cost \$6.6m, the results have ensured the economic sustainability of vegetable growing in the region. The growers were another crucial component to the success of the scheme; end-users of the water were one of the key drivers in bringing about the scheme, maximising their farm's potential.

As John Ringham, SA Water Chief Operating Officer said: "South Australia is a national leader when it comes to the reuse of treated wastewater and the Virginia scheme has had an important contribution to this. In May 2009 the Federal and State Governments announced the completion of the jointly funded Virginia pipeline extension – a \$6.6 million project to provide an extra three billion litres of recycled water annually. The pipeline now has the ability to provide up to 20 billion litres of recycled water. The Virginia scheme and the extension is a good example of SA Water working with a private company to maximise the use of recycled water."

The project has received international recognition from water recycling experts. Prof Thomas Wintgens, Professor in Environmental Engineering at the University of Applied Science in Northwestern Switzerland, has said "Australia is one of the front runners in water recycling and the Virginia Pipeline Scheme has a long term track record as a carefully designed and managed water recycling scheme of international significance."

The role of recycled water in irrigating food crops has set the benchmark for sustainable farming practices in Australia. "The Virginia Pipeline Scheme clearly established the precedent in Australia for recycled water to be adopted into productive agricultural systems", says Dr John Radcliffe, Honorary Research Fellow CSIRO and author of "Water Recycling in Australia". With continued periods of drought, and the unsustainable nature of groundwater extraction for agriculture, recycled water for crops will continue to grow over the coming years. As Ken Carypidis, of Lights View



Wines states, “having a secure water supply just eliminates one problem out of the way and you can get on with your job.”

Dr Daryl Stevens, Australian Coordinator, Recycled Water Development in Horticulture has been involved in aspects of the project since its initiation in the early 90s. In this regard, Daryl believes the scheme has set a global example on the use of recycled water for agriculture: “The Virginia Pipeline Scheme is very significant on an Australian standard and a world standard with respect to recycling water from sewage treatment plants and using that to grow food crops that are uncooked. The quality of the water, the quality assurance programs, the standards put into place and the guidelines used to develop the scheme have set the world stage for growing food crops using recycled water.”

“The scheme has successfully operated for 10 years with no human health issues and no detrimental environmental impacts, proving that recycled water can provide a safe and sustainable water resource.” “It is one of the best examples in the world of using recycled water to grow an enormous range of food crops, many eaten raw”.

“The success of the scheme is a credit to the growers of the district, SA Water and the scheme operators, both for their foresight in developing the scheme and its ongoing operation” says Dr Stevens, who acknowledges that horticulture without recycled water irrigation in some parts of Australia would have been virtually impossible: “I know many irrigators that have received just about no allocation of their water right over the last few years”.

Recycled water has delivered nearly half the water required by growers at Virginia. This water helped produce about \$110 million of product each year at the farmgate in the Virginia area (Pers.comm Justin Ross, PIRSA). This is approximately \$50 million of produce grown a year with recycled water. If multipliers indicated by Horticulture Australia are used (i.e. 2), farmgate value can be converted into benefit to the district of about \$100 million a year from recycled water use (HAL 2006) or \$1 billion for the 10 years of the project.

From its modest beginnings, providing 45ML day over peak season with 190 connections, the scheme has now reached maximum capacity at 105ML/day in Summer, servicing over 400 connections. The lesson to learn from this venture is that recycled water schemes for agriculture will only continue to grow, and building for excess capacity for future demands may provide greater long-term benefits. .

As Clinton Zerella (Zerella Holdings) indicated, “One of the things that the scheme has really brought to light in Australia today is the sustainability of water resources. This scheme has been (I believe) a shining light throughout Australia and highlights the way that modern farming can work in with suburban life.”

**Oct 1999**

190 connections

45 ML/D over peak season  
(maximum capacity)

**Today**

400 connections

105 ML/D over peak season

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More information

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## About Water Infrastructure Group

Water Infrastructure Group provides a unique combination of design, build, operate and maintenance services. We offer sole-source accountability for streamlined delivery of sustainable water infrastructure to meet community and business needs.

Our holistic approach to infrastructure delivery results in:

- Award winning innovation
- Reduced costs
- Guaranteed performance
- Individualised solutions
- Comprehensive environmental compliance
- Enhanced risk management

Water Infrastructure Group is an Australian leader in water recycling and Australia's largest supplier of Class A recycled water for farming and residential use. We have led the way with the introduction and regulatory approval of microfiltration technology for water recycling and our innovation and contributions to the water industry have been recognised by Australian and international excellence awards.

We have an extensive track record in the delivery of water and sewage treatment plants and we are one of Australia's leading infrastructure rehabilitation specialists, providing services such as pipeline inspection, assessment, linings, coatings and major valve work.

Some current projects from our portfolio include:

- Eurobodalla Northern Water Treatment Plant in NSW
- Barwon Water Biosolids Management Project in Geelong
- Campaspe Water Reclamation Scheme in Echuca
- Eastern Irrigation Scheme in Melbourne
- Mangawhai EcoCare Project in New Zealand
- Moura Wastewater Treatment Plant in Queensland
- Surbiton Park Recycled Water Plant in Melbourne
- Virginia Pipeline Scheme in Adelaide

Formed in 2008, Water Infrastructure Group has over 200 people and combines the complementary skills of the former Earth Tech water projects group with Tyco's Water Technology Australia and Water Services businesses to deliver an expanded range of services that cater for the needs of customers and current developments in the water industry. More information about Water Infrastructure Group can be found at [www.wigroup.com.au](http://www.wigroup.com.au).

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