

Toowoomba's still waters

The referendum in the Queensland region of Toowoomba last year saw voters reject a proposal to use treated effluent in their drinking water, despite the region's critical water shortage. But what are the effects on plumbers, asks Joanna Gerantidis?

According to top water experts and environmentalists, the domestic sector consumes more water and has higher levels of water waste than the industrial/commercial sector. Less and more variable rainfall because of climate change means Australia must conserve fresh water, use less water and fully utilise the huge volumes of wastewater – both sewerage and stormwater – that can be recycled while maintaining healthy water flows in our rivers, wetlands and estuaries.

As the town of Toowoomba starts to steadily slip to level 5 water restrictions, due to the city's three water supply dams falling below 20% capacity, it seems that many of its citizens still believe that drilling holes into the water table is a viable solution to their drinking water problems. This attitude was inevitably reflected in the referendum that took place in the shire on 29 July 2006. The prediction is that by 2030 climate change will mean rainfall in the Murray-Darling basin is expected to fall by 25% and evaporation rates will rise. Amid the worst drought on record it has become evident that structural change to water use systems in the domestic sector is somewhat of a necessity.

A typical household discharges approximately 35L of black water, and 105L of grey water per person per day. The potential for on-site treatment and reuse will depend on its quality. Grey water contributes about 65% of the volume of domestic wastewater, 70% of the phosphorus, and 63% of the biological oxygen demand (BOD), whilst black water contributes about 35% of the volume of wastewater, 61% of suspended solids, 82% of nitrogen and 37% of BOD.

According to the director of the CSIRO



The man behind the PurePlus system, Kevin Venville, demonstrates how the PurePlus system can produce both clean and clear drinking water.

Australian Research Centre for Water in Society, Blair Nancarrow, issues of “health and the ‘yuck’ factor are the main barrier to widespread community support towards recycling wastewater. Most people will support wastewater and grey water recycling in theory, but if you told them a wastewater recycling plant was going to be installed around the corner, emotion would start to dominate logic,” she says.

West Burleigh master plumber and founder of H2O PurePlus, Kevin Venville, has been installing grey and black water treatment and re-use systems throughout Australia for more than 20 years and says that “technological solutions are available to deliver a sustainable

water supply for Toowoomba and Australia in general.

“The water quality from both the grey and black water is of a ‘potable’ standard, exceeding the quality you would get out of a mains-connected tap. We have developed a wide range of domestic and commercial water treatment and re-use products that achieve extraordinary results,” he says.

Kevin explains that domestic and urban water systems no longer need to rely on the expensive and massive civil infrastructure of huge dams, leaky pipes, and polluting sewerage systems.

“The technology developed enables residents to non-chemically treat and recycle

all black and grey water. So far, more than 200 systems have been installed in private and community use situations that deliver re-usable water as clean as the first recovered drop," he says.

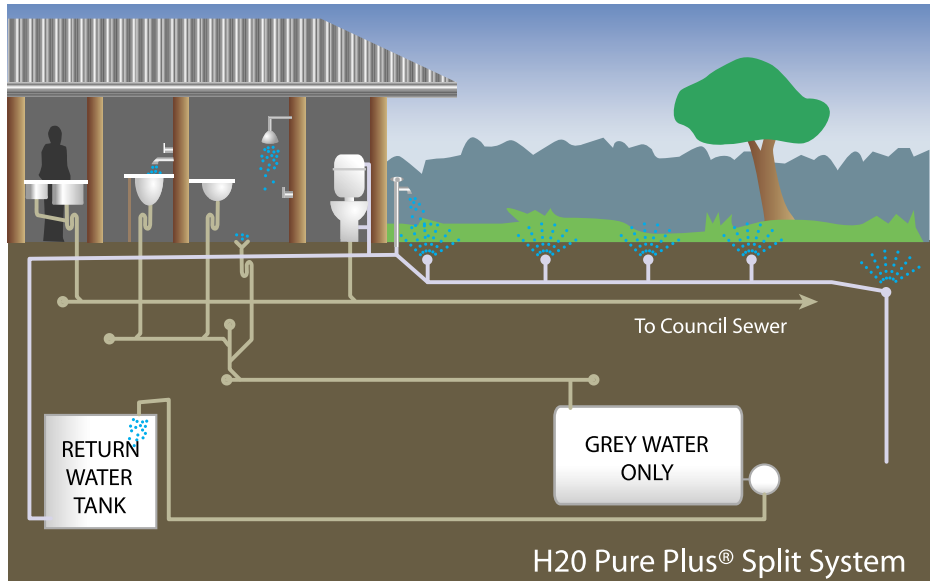
Water resource manager for Water Policy Services, Brian Sadler, explains that Toowoomba's referendum decision on wastewater re-use may be more of an indicator of the role of public perception in water decisions than of the value of re-use measures in water supply augmentation.

"Wastewater re-use is not a silver bullet for drought management, climate change, and other pressures on the national water balance. However, high-quality re-use technologies in various forms, applied for prime areas of demand on community water supplies, are becoming an increasingly safe, appropriate, common and sometimes necessary component of response.

Lack of plumbers

"The real lesson for Toowoomba may be how public decision making of this kind needs the creation of an environment of trust, which is always a fragile circumstance in new or complex socio-technical issues," he says.

Queensland plumber, Donald Nunn,



All household grey water – from kitchen sink, laundry and bathroom basins and showers – can be treated and re-used. The system deals with all the usual household cleansers, chemicals, food wastes and fats normally faced by urban sewage and wastewater facilities.

says that people are very active in using wastewater to keep their gardens alive.

The installation of rainwater tanks is at a high, "with the demand requiring a 12-week wait on supply". He says "business is very brisk in Toowoomba but there is a lack of plumbers available for employment to see through these installations.

"There is a concern regarding the installation of rainwater tanks by homeowners who are not taking the correct steps to ensure vermin-proofing is carried out. I am not sure what the long-term repercussions of using grey water for gardening may be.

"It is a little hard to tell if the mindset has



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changed since the referendum, but had the referendum gone the other way, I am sure that it is possible to treat sewerage effluent to a standard suitable for recycling,” he says.

The national target of recycling at least 30% of Australia’s wastewater by 2015 seems ambitious, but necessary. The 30% target

is an aggregate national target for recycling wastewater.

Kevin says that all household grey water – from kitchen sink, laundry and bathroom basins and showers – can be treated and re-used. “The system we offer deals with all the usual household cleansers, chemicals,



The H2O PurePlus Domestic is a ‘whole of house’ system for both internal and external water re-use. The external domestic system can be used to treat grey water or black water or both at the same time.

food wastes and fats normally faced by urban sewage and wastewater facilities,” he says.

According to Kevin, the H2O PurePlus system is connected directly to the standard grease trap with water flowing through the system to a collection chamber and submersible pump. The clean water is then automatically diverted back to the dwelling via the lilac-coloured recycling pipes for re-use in toilets, laundry and all outside hose cocks.

Alternatively, the clean water can be stored in rainwater holding tanks or fed directly into the swimming pool or onto the garden through hand-held hoses or sprinklers or even automatic drip irrigation systems.

“Each H2O PurePlus system is able to treat both grey and black water to potable standards. Pre-installed compartments within the system separate grey and black water. The cleansed grey water is returned to the dwelling via a return water tank. The black water can be connected directly to sewage and/or septic installations, but more importantly can go straight to external taps for outdoor water delivery.” ■

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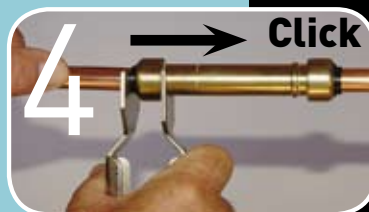
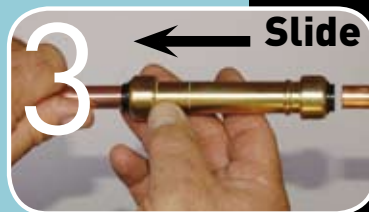
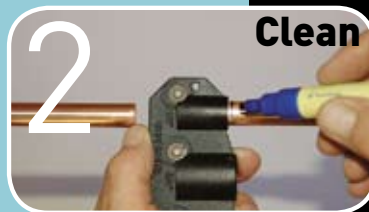
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