



## WaterFresh Water Purification Technology

### WaterFresh - Revolution

WaterFresh's revolutionary water purification technology results from eight years of inspired and dedicated R&D by Tony Dickson – Sardik Engineering's Director. Tony's invention carries forward the 40 year-long tradition of Sardik Engineering – a world leader in fluid processing technology.

Sardik Engineering is Australia's largest supplier of industrial mixing systems to the water treatment plant sector. For example, Sardik is the supplier of all the mixing equipment for Sydney's water supply plant at Prospect. Sardik is a specialist designer and manufacturer of industrial mixing technologies used by a diverse range of international companies, including P&G, a consortium of Chinese Power Stations and the mining sector.

### WaterFresh - Technology

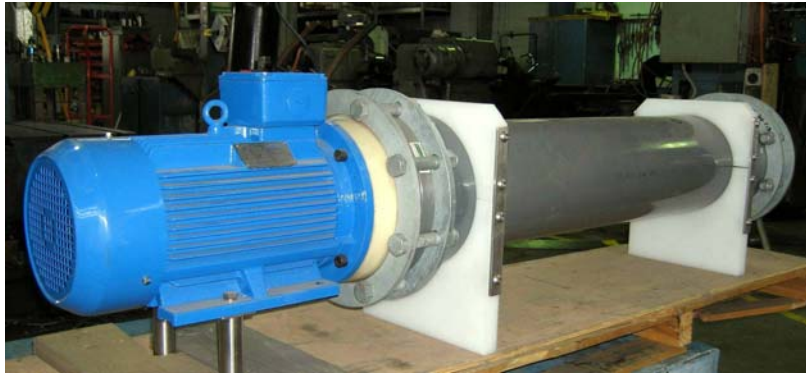
The WaterFresh technology purifies water in a single stage process, resulting in pathogen free water. The technology is unique as it efficiently destroys pathogens - disease forming substances, e.g. parasites, bacteria and viruses - by breaking apart their structure through a combination of - extreme pressure fluctuations, high shear mixing (cavitation) and high-energy sonic vibrations.

The process has been shown to tear the protein coat from pathogens (bacteria, viruses) so as to destroy (denature) them – achieving greater than a *one million times* (log 6) reduction in pathogens.

WaterFresh's advanced purification process uses a unique, patented device called a Cell Destruction Unit (CDU) - and holds exclusive Australian and global patents for the mechanical disinfection of water. The CDU is usually combined with a static mixer to incorporate a very small concentration of an oxidant into the water stream. The combined system, plus additional filters, is collectively called the *WaterFresh Purification System*.

The WaterFresh Purification system:

- Disinfects highly turbid water – as it does not rely on filtration to pre-clarify the raw water.
- Is independent of temperature and salinity – so it can operate in extreme environments.
- Allows water to be instantly purified and removes human or environmental health risks - including hormones.
- Can be installed as a custom-designed system or retro-fitted to all conventional processes for potable water purification.
- One unit is capable of biologically purifying 80,000 to 250,000 liters of water per day.

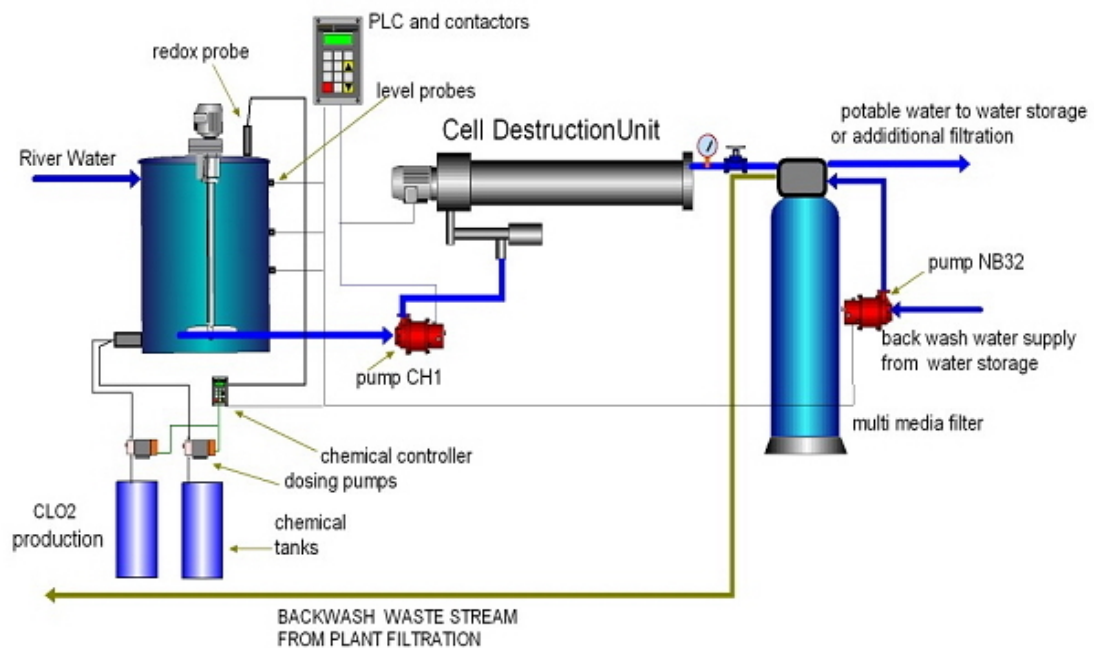


A CDU Ready for Installation

## WaterFresh – Broad Range of Applications

Application	Water Supply	Air Conditioning	Swimming Pools
Mining & Hydro Projects	YES		YES
Hotels & Resorts	YES	YES	YES
Hospital & Medical	YES	YES	
Residential	YES	YES	YES
Shopping Malls	YES	YES	
Airports	YES	YES	
Food Manufacture	YES		
Drink Manufacture	YES		

## Typical Water Purification System



## WaterFresh - Current Uses

WaterFresh technology has been operating since 2004 in the coastal eco-development at Sunrise 1770 at Agnes Waters Queensland, Australia's first truly sustainable development for a future population of some 700 people.

- It has been approved for purchase by the Sydney Turf Club, Canada Bay City and Hornsby Council in NSW, and Glenmorgan town in Queensland and Swansea town, Tasmania for their drinking water supplies.

## WaterFresh - Accreditation

- The WaterFresh technology has been approved by the Queensland Environmental Protection Agency (Qld EPA approval – CG174DA). It also fully complies with the certification criteria established by all other states in Australia.
- Additionally, it is being monitored long-term by the Wide Bay Water Corporation (a NATA accredited laboratory), the Great Barrier Reef Marine Park Foundation and the James Cook University Marine Sciences Department.

## WaterFresh - Results of Verification Testing

In 1998, trials began on a method of disinfecting raw sewage using the minimum amount of free chlorine. In 2001 field trials began on the WaterFresh process to disinfect raw sewage and/or liquids with turbidity as high as 70. It has continually proven to destroy viruses, *independently of temperature or turbidity*.

The water reclamation plant at Sunrise 1770 has been tested on a monthly basis since it began operation in 2004. Its initial commissioning phase also included independent testing for viral disinfection capability.

- The Purification System showed more than a one million times reduction (log 6) of viruses (bacteriophage testing).
- There has never been a positive result for E. coli or faecal coliforms downstream of the Purification System (i.e. all results recorded as <1 MPN/100 ml, the limit of detection).
- Detailed test results are available on request.

## Comparison with Other Technologies

- **Membrane filtration** has the ability to separate pathogens, but does not destroy pathogens and is vulnerable, as any damage to the membrane will allow pathogens to flow through. It also uses over 50% more power than the WaterFresh Purification System.
- **UV** (Ultraviolet) light is limited to use with extremely clear water, as the effects of shadowing - pathogens hiding in the shadow of other pathogens and particles - allows pathogens to pass through. The WaterFresh Purification System works equally well with turbid water.
- **Chlorination** free chlorine most commonly used in drinking water can often be *ineffective* against Cryptosporidium and Giardia (protozoan parasites) and some viruses and bacteria. Free chlorine also reacts with organic carbon to produce trihalomethane (THM) – which are known to be carcinogenic. The WaterFresh Purification System kills these pathogens.



## Services for a Crowded Planet

If you have responsibility for providing safe water or for high density human waste disposal - you are now in the right place. We offer the world's best technology for drinking water supply and waste water treatment.

EcoAsia is your source for cutting-edge smart solutions for bio-safe water supply and waste water treatment - right here in Asia. Our products are economical as we believe you shouldn't have to pay the earth to save the earth.

### Who We Are

EcoAsia brings Australian quality and reliability to Asia - this is where we live and work. EcoAsia knows the Asian community needs reliable technologies at reasonable cost; products that will safeguard the health of the generations to come. We provide modern technology to meet future needs. Our products are guaranteed to meet or exceed local environmental standards and cost *less*. They do not cost the earth and do not consume it, being ideal for tight construction sites. We indeed provide Services for a Crowded Planet.

### Why Us?

The technology we offer is cutting edge. It's the best available, innovative equipment produced under stringent conditions to meet the exacting standards of the Australian Health and Environmental authorities. It uses unique and known technologies in creative ways to safeguard your health and that of the biosphere in which we live. If you want quality assurance and a calm mind we can help you.

The staff of EcoAsia have decades of environmental and technical experience in Asia. We bridge the cultural and logistic gap by actively working with you to design effective and economic systems to meet rising demands for environmentally sound performance. It enables you to honestly say that your project is "clean and green."

Through partnerships with Australian companies EcoAsia provides cost-effective access to innovative and resource-conserving technology plus support services for drinking water supply and waste water treatment.

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