



INDEPENDENT VALIDATION TO MEET THE U.N. MDG GUIDELINES

The Murdoch University School of Environmental Science in Australia undertook an independent three way evaluation of the technology in 2004. The objective of the assessment by Wendy Green was to verify the SkyJuice technology performance and also determine if it was a suitable environmentally sound technology in comparison to alternative methods.

For verification of the SkyJuice technology, laboratory examination of clay and algae turbidity removal by three SkyJuice units as well as bacterial removal by another three SkyJuice units were conducted. Control and membrane fault tests were also performed using deionised water and the bubble point test. The Environmentally Sound Technology – Performance Assessment (EST-PA) was used to assess the SkyJuice, chlorine disinfection (by Calcium Hypochlorite) and SODIS technologies in detail. The EST-PA was still under development by the United Nations Environment Program. EST-PA proposed criteria and indicators were used with some suggested changes to analyse the technologies.

The SkyJuice unit outperformed other units evaluated and clearly offered a wider scope of absolute particle removal and disinfection relative to other existing practices.

Murdoch University verified that the SkyJuice performance met manufacturer's claims and World Health Organisation guidelines always after five minutes of use since cleaning the membrane. The SkyJuice unit was found to be the most environmentally sound technology and suitable for low virus risk areas, whilst chlorine disinfection could be suitable but had higher environmental impacts.

COSTS AND THE FUTURE

The SkyJuice™ Foundation is continuing its long term programmes using a variety of designs. The larger capacity SkyBank™ unit has been developed for immediate deployment and is completely autonomous. These are offered to humanitarian agencies on a cost subsidised basis. In real terms based on the nominal media life of ten years, this represents a cost of approximately \$0.35-0.50 per person per annum.

Since there are no tangible operating costs, it makes for a compelling economic supposition. That assertion is that the millennium development goals should be affordable. With the generous support of Crown Projects Services, Clean-up Australia and the SkyJuice a completely sustainable plant using solar photo voltaic panels, tracker and a solar windmill was commissioned. It has a long service life, and operating costs are essentially zero.

A fully commissioned plant for 3000-5000 people is now reality for less than \$1.00 per person per annum. The SkyStation™ essentially means that there is no reason to ignore the affordability of pure safe, sustainable water for all citizens of the world. The Millennium Development Goals to achieve pure, safe and affordable drinking water somehow seem a lot closer. SkyHydrant™ may just be the critical affordable technology to achieve a global success.