MAKING CLEAN WATER & SANITATION A RIGHT.

WATER SECURITY

CHANGING TIDES Limited
Building the Africa of the future



www.changingtidesgroup.com

Acess to Clean, Safe Water

According to the United Nations Environment Programme, “The sheer scale of dirty water means more people die from contaminated and polluted water than from all forms of violence including wars”.

This includes 2.2 million people whose deaths are attributed to diarrhea, mostly from dirty water, and 1.8 million children aged under five who succumb to water-borne diseases. This equates to one infant every 20seconds.



More People Die From Contaminated And Polluted Water Than From All Forms Of Violence







Hercules

The Hercules solar powered water purifier is designed to provide clean and safe drinking water to rural communities where the existing water source is unsafe and where the power supply is unreliable or non-existant. It was developed in response to a need expressed by a local NGO. The brief was to build a purifier that effectively disinfects approximately 4000 liters of water per day.

The unit should be sturdy and secure as it will be bolted into a concrete slab and work on solar power but at the same time have the ability to work from conventional electricity should that be needed. Cholera and other water borne diseases should be eliminated or their impact greatly reduced.



A Purifier That Effectively Disinfects Approximately 4000 Litres Of Water Per Day







THE UNIT.

The unit consists of essentially a pre-filtration and an ultra-violet purification ‘module’. The unit is solar powered, but can be operated from a conventional power source by manually switching to ‘mains’. The ultra violet light purifier is suitable to disinfect water that is compromised in terms of bacteriological contamination. The pre-filtration consist of a 20 inch 5 micron sediment filter as well as a 20 inch carbon block both these filters are housed outside of the steel cabinet to facilitate ease of maintenance in terms of filter changes. The unit can easily be adapted to input/supply from many different water sources i.e boreholes, rivers, dams and lakes. The unit needs a minimal pressure and will operate effectively on any pressure from 0.1 bar up to 5 bar. In cases where the water is contaminated with nitrates we recommend a reverse osmosis purifier, which we can also supply.

TARGET AUDIENCE - All rural communities with a contaminated water supply/source and who either have restricted access to electricity or no conventional electricity supply. Installations are normally done at schools, hospitals or community centers. Other parties that can benefit from the use of the unit are disaster relief organizations and any organization operating in areas where there is a lack of infrastructure to supply a constant source of clean water. These companies include but are not limited to organizations in the mining, construction and exploration industries.

Sentinel

The trailer mounted mobile Sentinel water sterilisation units are standalone self-contained and lockable units which are easy to operate and can be rapidly deployed, to provide drinking water to up to 1000 people per day. These units are electronically controlled to minimize unnecessary human error.

Maintenance is very low. The only day to day running costs are fuel. Water is drawn from a sweet water source and is circulated through a series of filters including a carbon filter. Then it is circulated through our patent pending sterilizer which destroys and removes organic matter from the water and provides fully treated and sterilized drinking water. Minimal operator training is required. These units are electronically controlled to minimize unnecessary human error.









POWERED BY A CHOICE OF SOLAR, DIESEL OR PETROL.

These units are powered by either petrol or diesel generator-sets, or our new solar driven system.

The basic system sterilizes, kills and removes all bacteria and viruses in the water, providing the community with safe, clean drinking water at a very low cost. There are additional options available for removing toxic metals such as Arsenic and Mercury from any water source.

The unit will only operate effectively with a neutral pH water. In situations with the source water pH is over or under neutral, we can provide equipment to overcome the problem.

The system is totally modular and can be customized according to requirements in any given area. The existing units produced 500 L drinking water per hour.

Custom options such as diesel or petrol generator sets, solar, toxic metal filtration and static skid mounted systems can be ordered as required.









The Basic System Sterilizes, Kills And Removes All Bacteria And Viruses In The Water



















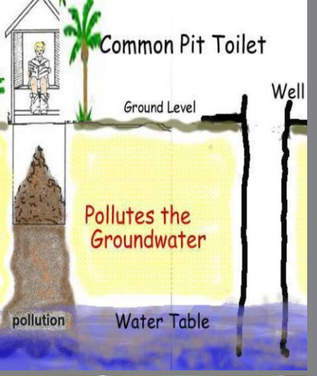




Guardian

The Gardian recycling system was developed for potential clients such as game lodges, farming ventures and remote shopping, industrial and housing complexes, as a turnkey system for treating the sewage. The great attraction of the system is that the treated sewage water is safe to use for irrigation, reintroducing in to rivers or dams, or even in to the house flush systems.

The plant captures all domestic “Grey Water” from dishwashers, washing machines, showers, baths and sinks as well as “Black Water” from toilets. This waste-water gets biologically treated, then sterilised by Ozone or UV. By implementing the technologies the result will be: Clear, Odourless and Environmentally Safe Water ready to irrigate your land.







Talon

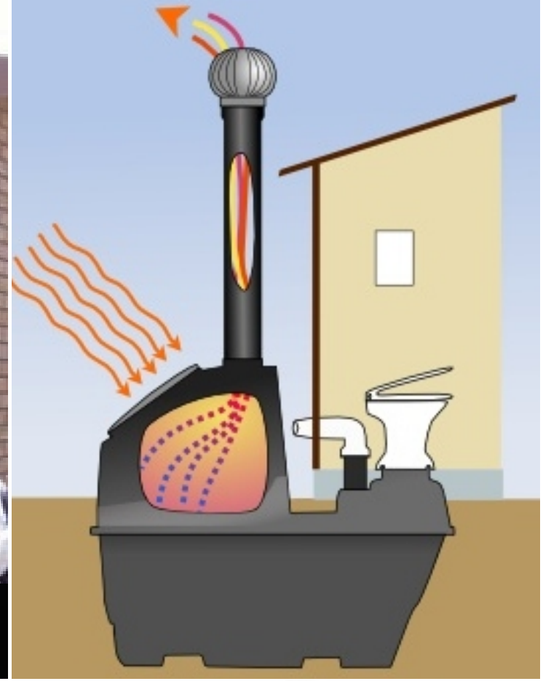
Poor waste management results in an extremely critical health scenario, unbearable smells and unparalleled danger zones. Talon powder specializes in Bio Remediation which is a process whereby human faecal waste is broken down faster than its natural occurrence.

Ineffective human waste management results in an unstable and an eventual deadly impact on the natural environment, in that with time, natural water supplies like rivers, dams, streams, bore holes etc. inevitably become the breeding ground for infectious diseases like Cholera, Malaria, TB, Hepatitis and in the worst case scenario, and previously proved, HIV / Aids.



Poor Waste Management Results In An Extremely Critical Health Scenario







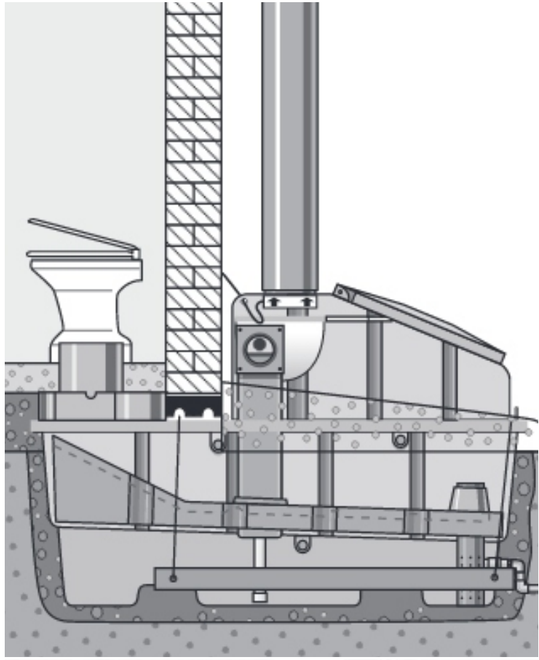


Sherpa

Urbanisation is contributing to a major sanitary crisis in urban areas and the need to feed an increasing population is putting stress on agriculture. Both these trends demand use of the most precious of the planet's resources – water.

We have to conserve water – there is no alternative.

The Sherpa has zero environmental impact. It uses no water. It uses no chemicals. Its advanced technological design enables the processes of dehydration and evaporation to occur naturally without any soil or water contamination; as the decomposition takes place in a sealed unit. Nature, namely sun and wind, aid the processes for waste decomposition – both of which cost nothing. The design is such that there is no contact between people and the system. This has to be the future of all sanitation systems; no water wastage, no soil or water contamination, minimal maintenance costs.







Wherever They Are, People Need Water To Survive

WATER CRISIS

Wherever they are, people need water to survive. While the amount of freshwater on the planet has remained fairly constant over time—continually recycled through the atmosphere and back into our cups—the population has exploded. This means that every year competition for a clean, copious supply of water for drinking, cooking, bathing, and sustaining life intensifies.

In much of the developing world, clean water is either hard to come by or a commodity that requires laborious work or significant currency to obtain. The challenge we face now is how to effectively clean, conserve, manage, and distribute the water we have..

For additional information, please either contact olivier@changingtidesgroup.com or visit www.changingtidesgroup.com