

# U.S. Army in Afghanistan Takes Delivery of New Bacterial Bioreactors to Clean Wastewater

By [Jeremy Hsu](#) Posted 02.11.2010 at 10:51 am



**Engineering Wastewater Treatment** Sabin Holland is the lead scientist on a waste-water treatment system developed at SHSU which has both military and civilian applications. *Sam Houston State University*

Bacteria have been deployed to Afghanistan to help the U.S. Army clean polluted wastewater. The microbes commonly appear in handfuls of dirt, but now form the main component of two new bioreactors made by [scientists](#) at Sam Houston State University in Texas.

More specifically, the "proprietary bacterial consortium" helps create a biofilm that can self-regulate and has proven highly efficient at cleaning wastewater. Researchers demonstrated the system's ability to clean wastewater within 24 hours at several city and military sites, so that less than ten percent sludge remained by volume. That contrasts with traditional septic systems that can take 30 days and leave 40 or 50 percent sludge, the researchers said.

The demo apparently impressed the Army enough to order two of the units, which arrived at Afghanistan inside 20-foot shipping containers.

"The technology is scalable," said Sabin Holland, the lead scientist on the project. "We can make the units as large as required for large scale treatment applications, or as small as a single home unit."

Sam Houston State partnered with the private firm PCD Inc. to create a limited liability corporation called Active Water Systems, which is managing commercialization of the bioreactors. But there's no word so far on cost.

Microbes have done similar cleaning duty in other applications, such as a fuel cell that [makes salt water drinkable](#) and generates power in the bargain. We imagine technologies like this could go a long way toward helping renovate [America's aging infrastructure](#).

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