



# MAKING WATER SAFE TO DRINK, ONE FILTER AT A TIME

Ceramic water filters provide inexpensive solution to a global problem. BY JENNIFER BROZAK







**A**n estimated 700 to 800 million people across the world do not have access to clean drinking water, according to the United Nations. Now a charitable organization based in Bridgeville is taking action to change that, one filter at a time.

Last December, Michael Stubna of Collier Township launched Ceramic Water Filter Solutions, a non-profit organization dedicated to the manufacturing of ceramic water filters, as well as the education and training necessary to use them.

Stubna, a retired horticulturist, launched the organization after he participated in a few mission trips with his church and saw first-hand how severe the problem is.

“People don’t realize how much the cycle of poverty stems from a lack of access to clean water,” says Stubna, 68. “It leads to sickness, which leads to a stunted growth rate, which leads to being absent from school, which perpetuates the cycle.”

When he returned from his mission trips, he grew determined to find a way to help.

“I saw how people had plenty of access to water, but had no access to clean water,” explains Stubna. “It’s not safe to drink or cook with.”

After connecting with the Potters Water Action Group in Braddock, Stubna realized how a low-cost ceramic water filter, made from native materials like clay and sawdust, can transform undrinkable, bacteria-laden water into potable water.

The filters are created by mixing local clay with a burnable material, such as sawdust or rice husks. When the clay is fired, the friable material burns out, leaving “micro pores” that filter out particulates from the water. After they are fired, the pots are then treated with colloidal silver, which acts as an antibacterial and anti-algae agent. According to the World Health Organization, the pots are effective at filtering 99 percent of the bacteria in water—and are as equally effective as boiling water, which is both cost-prohibitive and time consuming.

“The filters work so well that they can remove the color from Coke,” Stubna notes. “They won’t take the sugar out, but they will remove the color.”

The filter sits on top of a spouted 5-gallon bucket and produces about 2 to 3 liters of potable water an hour. A family can expect to produce around 70 liters of clean drinking water a day, says Stubna, and the impact is instantaneous.

“I’ve never seen a device make such an immediate difference at such a small cost,” he adds.

The ceramic filters are simple-to-use, passive devices. All users have to do is pour water in the filter and let it work. The filters also are essential during natural disasters, when potable water is scarce.

“You pour the water in and a short time later, you’ve got clean water. You don’t need new infrastructure or electric. You don’t need anything else,” he says.

Each filter will serve a family for about two years. Despite the benefits the filters provide, families can lose interest in using them, especially because over time, the flow rate will drop.



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“Without education and follow-up, we lose a percentage of users every month,” explains Stubna. “We can help them make the filters, and teach them how to use them, but we can only offer help. We can’t force people to use them.”

One ceramic water filter can serve a family of four—although a family of four is considered an anomaly in developing countries, says Stubna. Most households have eight or ten family members living together, he points out.

Cost, of course, is the overriding factor. It costs between \$20,000 and \$50,000 to start a ceramic water filter factory, and developing countries do not have the money to build one.

“You can’t tell people in Nepal that they need to come up with \$50,000 for a factory,” says Stubna. “They don’t have it.”

Like many charitable organizations, Ceramic Water Filter Solutions relies on fundraising and donations to fund its work. The group has conducted missions in Kathmandu, Nepal; Osun State, Nigeria; and Tuxtla Gutiérrez Chiapas, Mexico. A project in Cuatrociénegas-Coahuila, Mexico, has stalled due to lack of funding.

“Raising money is extremely difficult. We’re competing with a lot of different and equally valuable projects,” Stubna says.

Despite these challenges, he and his organization remain committed to this invaluable work. They’re working with volunteer organizations nationwide to help improve the lives of people around the world. After all, he points out, safe water is a right, not a privilege.

“Every day, I get 10 times more back than what I gave,” he humbly states. “After all, how many people’s lives are going to change with this simple device?”

Ceramic Water Filter Solutions is always looking for volunteers and to partner with existing outreach organizations. For more information or to donate, visit [ceramicwaterfilter.org](http://ceramicwaterfilter.org). ■