



TAM Ceramics Newsletter

Granulated Ceramic Water Filter Media

March/April 2019

A household water filter for Sub-Saharan Africa

For upcoming projects in several parts of Sub-Saharan Africa TAM's granulated ceramic water filters will be for the poorest of the poor. Household water filters of granulated ceramics will be contained within thin walled PVC pipe, the low cost of which will help assure affordability.

Shown is the inside of a system of 3.0 inches (7.6 cms) diameter and 30.0 inches (76.2 cms) height. Not shown is an inverted, recycled bottle which will self-feed pathogen contaminated water at the top, into the granulated filter bed.

Because the PVC pipe is opaque white, users will only know that the water is being treated and is available by the transparency of the self-feed bottle and the outlet tube. A caution is that while the filter media will last at least ten years, system containment fabricated regionally, needs to be sufficiently robust to last just as long.

The system is intended for a household of five or six, but with frequent topping off this will get safe drinking water to ten or fifteen persons. Alternative to the household systems will be those of large scale, tailored to the size of the community.

Monitoring and evaluation of projects over time will be key. Examples include attention to quality control by region in fabrication of system containment as well as the need to build awareness of practices of hygiene, for behavior change within the user population.

Budgets must include ample provision for follow up visits by water professionals designated by management and community committees. Strict but sensitive approaches will be important.

The granulated ceramic approach to household water treatment will be best practice as what is most genuinely sustainable. In addition to the very low cost is user-friendliness as well as the prospect of production in close proximity.

Projects will alternatively have the option of placing large scale water filters of the granulated ceramics, that get safe drinking water to entire communities from central locations. Householders will only need to walk a short distance from their homes to these filter systems.

Sustainable drinking water treatment awaits large scale

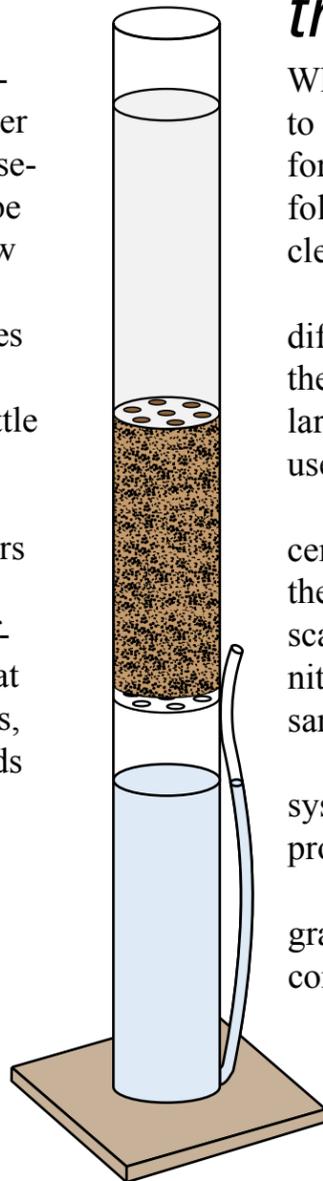
Where there are household water treatment projects it's difficult to know how those in their homes are doing this. For whatever form of treatment, are they following instructions? Are they following such procedures of hygiene as hand washing and cleaning the insides of the water storage containers?

Monitoring and evaluation of household water treatment is difficult because it depends largely on word of mouth of those in the households. By contrast such M&E will be far simpler for large scale, community systems at which the behavior of system users can be seen.

Large scale treatment with filter systems of granulated ceramics has unparalleled potential in making water available to the vast majority of community members. Wherever such large scale filter systems are implemented, and the requisite community committees and management function properly, the necessary behavior change of system users will be assured.

Sustainability means that the cost is remarkably low and the systems are user-friendly. The local 'water utility' will be the project managed through the local water committee.

With such genuinely sustainable water treatment as that of granulated media, low cost of all aspects will be apparent and consequently sustainability over time will be best guaranteed.



Shown at left is what's inside a household water filter of PVC pipe, with flow rate 2.0 liters per hour.

Is safe drinking water a consumer product or a human right? Given these filter systems, easy to maintain and reproducible almost anywhere, far greater numbers of those poor and of modest income will find safe drinking water to be affordable.

Monitoring and evaluation will be far easier once the filter systems are large scale, for entire communities.

Ceramics in environmental health is truly sustainable!

Ceramics is uniquely suited in remediating the two most apparent problems of environmental health in the developing world. In the January/February 2019 issue of *Ceramic Bulletin*, publication of the American Ceramic Society - ACerS, is the article, *Filtering safe drinking water through granulated ceramics*, http://tamceramics.com/wp-content/uploads/2019/01/-TAM-feature_01-02-2019.pdf

No less urgent in ceramics is the need for environmentally responsible cook stoves. Thousands of women and girls die every day as a result of smoke and fumes around stoves.

In the March 2019 issue of *Ceramic Bulletin*, scrolling down to page 22 is the article, *Reducing air pollution: Insulating ceramic rocket stoves*: <http://ceramics.org/wp-content/bulletin/2019/pdf/March2019.pdf>



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