

LOW COST UV DISINFECTION SYSTEM FOR DEVELOPING COUNTRIES:
FIELD TESTS IN SOUTH AFRICA *

Ashok Gadgil, David Greene, Anushka Drescher
WaterHealth International
Napa, CA, USA

Peter Miller
Natural Resources Defense Council
San Francisco, CA, USA

Ndirangu Kibata
University of Durban-Westville
South Africa

ABSTRACT

A recently invented device uses UV light (254nm) to inexpensively disinfect community drinking water supplies. Its novel features are: low cost (about US \$600), robust design, rapid disinfection (12 seconds), low electricity use (40W), low maintenance (every 6 months), high flow rate (15 l/min) and ability to work with unpressurized water sources. The device could service a community of 1000 persons, at an annual total cost of 14 cents US per person.

This device has been tested in a number of independent laboratories worldwide. The laboratory tests have confirmed that the unit is capable of disinfecting waters to drinking water standards for bacteria and viruses.

An extended field trial of the device began in South Africa in February 1997, with lab testing at the municipal water utility. A unit installed at the first field site, an AIDS hospice near Durban, has been in continuous operation since August, 1997. Additional test sites are being identified. We describe the results of the initial lab tests, report the most recent findings from the ongoing field test-monitoring program, and discuss plans for future tests.

* Presented at the First International Symposium on Safe Drinking Water in Small Systems, May 10-13, 1998, Washington, D.C. USA