

7-2008

Fluoride In Drinking Water: A Study Of The Cause And Effects In The Hai District Of Northern Tanzania

James Shorter

University of Newcastle-upon-Tyne

Follow this and additional works at: http://opensiuc.lib.siu.edu/ucowrconfs_2008

Abstracts of presentations given in Session 5 of the UCOWR conference.

Recommended Citation

Shorter, James, "Fluoride In Drinking Water: A Study Of The Cause And Effects In The Hai District Of Northern Tanzania" (2008). 2008. Paper 30.

http://opensiuc.lib.siu.edu/ucowrconfs_2008/30

This Article is brought to you for free and open access by the Conference Proceedings at OpenSIUC. It has been accepted for inclusion in 2008 by an authorized administrator of OpenSIUC. For more information, please contact opensiuc@lib.siu.edu.

Fluoride In Drinking Water: A Study Of The Cause And Effects In The Hai District Of Northern Tanzania**Presenter****James Shorter****Mr.**

University of Newcastle upon Tyne

Newcastle upon Tyne, Northumberland UK

4.4773057205e+011

j.p.shorter@ncl.ac.uk

Fluoride In Drinking Water: A Study Of The Cause And Effects In The Hai District Of Northern Tanzania

The Hai District in Northern Tanzania is one of the many areas along the East African Rift Valley where the groundwater contains high levels of fluoride. This study by sampling fluoride levels from water sources in the 52 villages of the Hai District identified two communities where the fluoride levels were high and presented a risk to human health. From a small quantity of rock samples and geological maps it seems that the two communities sit within certain geological conditions created by the volcanic events of mount Meru. This is further evidenced by reports of high instances of fluorosis in the neighbouring district towards Mount Meru which, it is suspected, has the same geological conditions. The two communities in question predominantly use groundwater as their drinking water source. The levels of fluoride ranged from 5mg/l to 35mg/l. In comparison the World Health Organisation's guideline for drinking water sets a maximum level for fluoride at 1.5mg/l. The health implications for the communities of drinking fluoride rich water are dental fluorosis and skeletal fluorosis. Using two primary schools as a basis for the study it has been found that both school populations had a very high incidence of dental fluorosis. One school also had high levels of fluoride related bone deformities. There are two aims of the project firstly to study the pathway of fluoride from rock to water to human. The second aim is to study the impact of intervening in the water-human pathway. The intervention chosen was locally made bone char filters which will be installed in the schools providing the children with water with safe fluoride levels. If the implementation and sustainability of the filters is acceptable it potentially could be an affordable solution for the affected communities.