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Suitability of Groundwater for Domestic Consumption in Gampola Town

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ABSTRACT

Gampola town is a rapidly developing commercial and residential area. There was a viral hepatitis out break in May 2007 in Gampola town due to faecal contamination of pipe born water. Later, it was found that ground water is also contaminated in this area. People of Gampola town prefer to use ground water despite availability of pipe born water. This study was conducted to find out the suitability of the ground water, specially the microbial quality, in Gampola town for domestic consumption, and to analyze the reason for inclination of people to use ground water.

Most of the wells in the study area are manually drilled shallow tube wells. We have selected 20 shallow wells to monitor there bacteriological quality, electrical conductivity and the water level from the ground surface for a period of 5 months. Questionnaire survey was done to find out the usage and the reason for the use of ground water. 80% of the wells were below the Sri Lankan drinking water quality standard throughout the period with spatial and temporal variations in the degree of bacterial contamination. There was a spatial variation of ground water table from 0.9 to 11.0 meter from the surface. Most probable reason for the faecal contamination of ground water could be due to seepage from the toilet pits located around the wells. Pumping water from shallow wells is cheaper than the pipe born water and it is the main reason for the trend to use the shallow wells. Using untreated ground water could lead to outbreaks of waterborne diseases.