



CADMIUM, ARSENIC AND FLUORIDE IN GROUNDWATER AT GIRANDURUKOTTE AND NAGADEEPA, BADULLA DISTRICT, SRI LANKA

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Water is considered as essential forms of every animal life and plant type; thereof groundwater is the most essential resources for human. On the other hand, one of important environmental issue is contamination of groundwater in the world. Hence, study on groundwater quality is vital to get idea of water health.

The present study deals with the variations of Cadmium (Cd), Arsenic (As) and Fluoride (F) in Nagadeepa (81°4'21.126"E, 7°21'18.0924"N & 81°8'42.2501"E, 7°13'41.5306"N) and Girandurukotte (80°58'30.1537"E, 7°32'30.979"N & 81°2'52.1278"E, 7°24'53.7772"N) areas in Badulla district. Samples were collected once a month between January, 2014 and June, 2014 from 28 wells representing each area. The samples were analyzed using ICP - MS and Hach SpectroPhotometer.

The results compared with WHO maximum permissible levels of Cadmium, Arsenic and Fluoride are 3.0 µm/l, 10.0 µg/l and 1.5 mg/l respectively.

The obtained results of the study vary; Cd from 0.002 to 0.78 µg/l and 0.005 to 0.86 µg/l; As from 0.01 to 0.97 µg/l and 0.008 to 15.5 µg/l; F from 0.0 to 1.74 mg/l and 0.0 to 2.05 mg/l in Girandurukotte and Nagadeepa respectively.

The recorded values of As and F were above the maximum permissible level and Cd levels was below the maximum permissible level.

Keywords: *Nagadeepa, Girandurukotte, Groundwater quality, Cadmium, Arsenic & Fluoride.*