Physiochemical Characteristics of Ground Water in Out Skirt of Tsunami Affected Area - Case Study in Denipitiya, Southern Sri Lanka

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The Tsunami disaster in December 26th of 2004 has created several problems on the supply of drinking water to the affected because most of the coastal water sources in the Sri Lanka was badly damaged including individual wells which were in the area. Due to the contamination of the coastal aquifer, wells situated in the out skirt of the tsunami belt were investigated to find a suitable water resource to supply drinking water to the affected people living in camps. A Dug well selected to supply water to the affected people in Denipitiya is situated (nearly 1.5 km from the costal line) in the outskirt of the tsunami-affected area. As per the initial survey wells situated in the outskirt area appeared to be highly contaminated with E Coli and Coli form Bacteria. However in the well water, nitrate, nitrite and ferrous concentrations were below 1 mg/l, 0.05 mg/l and 0.2 mg/l, respectively, which are within the permissible concentrations according to WHO standards. Ground water monitoring was conducted from February to December and water level behavior was observed in the Pumping well and surrounding wells. Identified the relation between water level, electrical conductivity (EC), Salinity and atmospheric precipitation.

The maximum EC value is 930μS/cm and minimum is 710μS/cm and result indicates that just after rains, EC of the ground water slightly decreases. The averages of pH, EC, TDS, turbidity of water were 7.22, 856 μS/cm, 355 mg/l and 0.54 NTU, respectively in the pumping well and these physiochemical parameters are acceptable according to the WHO guidelines.

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