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DETERMINATION OF WATER QUALITY INDEX AND SUITABILITY OF MURUNKAN GROUNDWATER FOR DRINKING WATER SUPPLY

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In Sri Lanka, groundwater is one of most precious natural resources and almost 80% of the rural populations rely on groundwater for their domestic needs. In Mannar district availability of groundwater is limited and contaminated by sea water intrusion. The Murunkan groundwater basin is the most important and most reliable water resource in Mannar district. This study was designed to evaluate the suitability of Murunkan sources for drinking water supply. Water Quality Index (WQI) is the most effective method of measuring water quality and determining the suitability of water for drinking purpose. Drinking water need of the Mannar district is covered by four (04) Nos. of wells in Murunkan. Samples were collected from boreholes during January to December, 2016 period and all physico-chemical tests were carried out based on APHA and SLS standard. Finding reveals Electrical Conductivity, Total Alkalinity, Total Hardness and Total Dissolve Solid content were above the SLS 614:2013 level and pH, Turbidity, Chloride, Nitrate, Phosphate, Fluoride, Calcium and Sulphate content were below the SLS level throughout the year. Water Quality Index of all four boreholes were in a range of 30.5-37.5 and grading of the water was 'B'; hence water was considered good for drinking. Therefore, water from Murunkan boreholes can be used for drinking water supply. Bacteriological parameters were not taken for this study because the water is disinfected before being supplied. Seasonal variation of water quality was not clearly observed as it is a confined aquifer.

Keywords: *Water Quality Index, Groundwater, Murunkan*

