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**GROUNDWATER QUALITY AND CHRONIC KIDNEY DISEASE IN
THE NORTH WESTERN PROVINCE OF SRI LANKA –
A CASE STUDY**

A PROJECT REPORT PRESENTED BY

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Abstract

Groundwater is one of the major sources for domestic water supply and agriculture in the dry zone areas of Sri Lanka. Presently this valuable source is contaminated from anthropogenic activities and natural components due to geological formations. Today communities in North central, Uva and part of North western provinces are suffering from renal problems possibly link to the consumption of such vulnerable water. Several assumptions are there to as causative factor and that are not yet confirmed. In Polpithigama DS division in Kurunegala district, located between Kurunegala and Anuradhapura district boundaries is now identified as pinpoint area for Chronic Renal Failure (CRF) disease. Present study was carried out to find the quality of groundwater in that area and to look for possible relationships between parameters and health issues. During this study Polpithigama DS division is selected as the pinpoint area, Maho DS division as near by area and Kurunegala region as control area. Chemical data for hundred numbers of wells in above three regions were taken from past records. During the study water sampling and analysis carried for investigate the level of water quality in above three DS divisions. Most of well chemical data are comply with the SLS standards. In Kurunegala region groundwater quality is better than other two regions. Maho and Polpithigama DS Divisions Alkalinity, Fluoride concentration and Electrical conductivity levels are near or exceeded the permissible levels. When considering the interaction between water quality parameters, it observed that water hardness, alkalinity, conductivity levels are positively correlated with each other. These parameters are depending on ion concentration in water. Based on present study we can conclude that chemical nature of water quality such as

elevated alkalinity, conductivity and basic pH levels in Polpithigama area more favorable to dissolve minerals & increase the activity of ions. Nutrient contamination of water is also identified in Polpithigama region. This situation may be the reason for generated kidney problem in the region.