HYDROGEOLOGY AT A BOUNDARY BETWEEN SEDIMENTARY AND HARD ROCK AQUIFER UNITS :A CASE STUDY FROM PALAVI IN THE PUTTALUM DISTRICT

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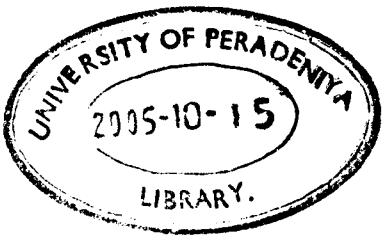

Water scarcity that prevails in the country for domestic and industrial uses must be viewed in qualitative and quantitative manner with the varying hydrogeological domains of Sri Lanka. The dry zone of the country invariably has to depend on groundwater resources. The present study was carried out at the Puttalum cement factory where the daily water requirement exceeds 1000 m^3. In this context, detailed hydrogeological and geophysical investigations were needed in order to demarcate most favorable areas for groundwater extraction.

Hydrogeological factors of the area are mainly governed by the geological fomatios, which are consisting of sedimentary and crystalline hard rocks. An assumption that guided this study was that the groundwater resources potential is very much higher in sedimentary formation than in crystalline hard rocks of this area.

A geoelectrical resistivity survey was conducted in order to identify geological formations laterally and vertically. Analytical results of resistivity survey indicate the geological formations as well as the boundary between sedimentary and hard crystalline rock formations.

In order to confirm this situation, test borehole drilling was conducted in two places and existing well records were also analyzed. All these data confirm the interpretations, based on resistivity survey. Tansmissivity of sedimentary aquifers are in the range between 64 and 416 m^2/day indications high potential of the aquifer as a future reserve.