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Assessment of Groundwater Quality due to Leachate Generated from a Solid Waste Dumpsite

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In Sri Lanka, one of the main sources of groundwater pollution is the leachate generated from solid waste dumpsites. Karadiyana landfill is located 2km from Ratmalana airport, which receives nearly 500 tons of Municipal Solid Waste (MSW) daily. There is a considerable number of wells in the surrounding area, which are being used for drinking and other domestic purposes. The main focus of this study was to identify whether there is any effect of leachate on groundwater in nearby areas of Karadiyana dumpsite. Thus, well waters in nearby areas of the Karadiyana Dumpsite were collected. Subsequently, parameters such as pH, Electrical Conductivity (EC), Total Dissolved Solids (TDS), Total Phosphates and Ammoniacal Nitrogen included in these groundwater samples were determined. After the obtained concentrations were compared with permissible standards for drinking water, it was identified that some of the groundwater samples contained several contaminants exceeding the permissible limits. Moreover, the effect of distance on the degree of leachate contamination was also determined. Accordingly, it was suggested to identify the causing grounds for the anomaly obtained in these outcomes. As the conclusion, it was determined that for the time being, there is no significant effect of leachate on groundwater within the area starting from 400m away from the Karadiyana Dumpsite.

Keywords: *groundwater pollution, dumpsite, solid waste disposal, leachate*