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**Water Table Estimation in Attaragoda GN Division in Galle, Sri Lanka**

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**Abstract**

The fluctuation of the groundwater table depends on geology, topography, climate and human consumption pattern. Long-term reduction of groundwater table caused by global climatic changes and overexploitation. However, short-term fluctuation is caused by climatic variations such as rainfall patterns and evaporation. Groundwater consumption is increasing at an alarming speed due to the increasement in the population, and it directly affects the reduction of the water table. Attaragoda GN division is considered a rural area in the wet zone of Sri Lanka. Most households utilize groundwater as their principal water source. There is no research conducted to assess the water table in the Attaragoda GN division. A preliminary study tried to determine the water table in Attaragoda GN division, Galle to fill this research gap. As a tropical country, the month of November is considered the second inter-monsoon season in Sri Lanka. Randomly selected 33 groundwater wells were considered as the sample size from 142/A Attaragoda GN division. The study was conducted in November 2021 from 8.00 am to 2.00 pm. Elevation was recorded using “My elevation mobile app,” and the depth of the wells was measured using the measuring rope at the field in November 2021. The water table was calculated using the standard formula for all 33 sampling locations ( $Z=h-X$ ;  $Z$ =depth of water table,  $X$ =elevation,  $h$ =depth measured in well). Data analysis was done using plotting the water table graph against elevation. Regarding land elevation, the water table fluctuated in the 4 m-20 m range in the Attaragoda GN area due to geographic locations. The lowest water table was recorded at a well in the highland area, and the highest was recorded at a well in the lower land. Based on the results in a plotted graph indicated that the same elevation had different groundwater table levels. Main reasons for this different water table recorded in the same elevation identified as overused groundwater for maintaining a fish farm, watering flower nurseries, and animal husbandry practices. At the same elevation, the well that recorded the low water table caused overexploitation of groundwater than the well which had a higher water table level. Water table levels can change in the same area due to their native geographic features. However, at the same elevation water table might be adjusted according to the consumption pattern of the households.

**Keywords:** Elevation, Geology, Ground water, Water table