

## **HYDROGEOLOGY OF THE GANNORUWA ALLUVIAL AQUIFER**

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An alluvial aquifer is situated at Gannoruwa Kandy, on the left bank of the Mahaweli river. Hydrogeological conditions of the aquifers were studied bore hole information of water supply tube wells constructed in it.

The alluvial aquifer is about 0.03 km<sup>2</sup> in lateral extent. The water-bearing layer is about 9m thick and composed of fine to coarse sand, pebble and gravel. The water level during observations ranged between 6.0 and 9.5m below ground level and fluctuated with fluctuations of river water level. Three tube wells are in use to extract about 2000m<sup>3</sup> of water daily. Average draw-downs are low and range between 1.5 and -2.5m. Recovery of the wells is also very fast and 100% recovery is achieved within an hour after shutting-down of the pumps. The small draw down in the pumping tube wells show that the well discharges could be further increased by high pumping rates, because all the wells have sufficient saturated thickness for maintaining high draw downs even more than 8m. The main recharge source of the aquifer is found to be the adjoining Mahaweli river.

With an exception for iron, water quality of the aquifer lies within the WHO and Sri Lankan recommended standards for drinking water. However, the iron content of water is generally higher than the acceptable limits. This can be a result of corrosion of pump parts together with solution of iron-bearing minerals present in the aquifer, due to high acidity of water.

The aquifer is not fully utilized at present. In order to increase the production, it is possible to increase the pumping rates of the present wells and to construct more tube wells in the un-used parts of the aquifer, specially downstream to the present tube wells.