

## Surface and Groundwater Pollution at Gohagoda Solid Waste Dumping Yard

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Solid waste products are one of the main sources of environmental pollution in heavily inhabited and industrialised Sri Lankan urban areas. Solid waste products pollute the surface and groundwater sources at their dumping sites. Gohagoda solid waste dumping yard is situated near the Gohagoda area in Kandy and is the main solid waste site which takes all waste products from the Kandy Urban area. The Mahaweli River flows along the eastern boundary of the site. The area is the narrow valley which slopes from west to east. Municipal solid wastes are dumped in comparatively high elevated west part of the area. The Gohagoda groundwater intake plant is located at a distance 70 m upstream from the landfill site. Most solid waste disposal and sewage discharge are done without treatment. Therefore, it was essential to undertake a study to investigate surface and groundwater pollution at the Gohagoda solid waste dumping yard.

Leachates of the landfill were most likely to exist in a methanogenic phase according to the results obtained from the analyses which had slightly alkaline pH values. There was no significant groundwater contamination according to the results obtained from the water samples collected from nearby wells. The effect on the intake of Kandy water supply is almost negligible as the contaminants get diluted within the Polgolla reservoir water despite the fact that the intake is located upstream from the landfill site. It was observed that the existing shallow water sources and the river water were biologically contaminated with significant numbers of total coliforms and faecal coliforms. Therefore, these water sources are not suitable for drinking purposes.

According to the results of the study, this landfill can be considered as a threat to the local environment. Therefore, the responsible local and directorial authorities should take immediate actions to control solid waste disposal practices at Gohagoda solid waste dumping yard to prevent further contamination of surface water as well as groundwater and soil at the site.

