**Spatial Distribution of pH & Cd in Surface Water Around an Open Landfill**

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***ABSTRACT***

Open dumping of municipal solid waste (MSW) is the most common way of handling solid waste in Sri Lanka due to the high cost involved with advanced technologies for handling, lack of technical capacity, lack of knowledge-how to manage landfill sites, and so on. The Kelaniya provincial council also operates an open waste dumping site at Manelgama area in Kelaniya. This garbage dumping has been carried out continuously several years in this property without any sort of proper management. And this landfill is surrounded with a channel. So, in this situation, this area and water of this channel has been polluted. So I decided to do a research for the surface water of this channel with the rainfall to find out the effect of this landfill to the water of the channel. The objective of this study is to find out the distribution of pH & Cd in surface water of this channel. For that collected water samples from this channel in rainfall & dry events after 1hr, 5hrs and next day because of the differentia of the leachate with the environmental conditions (Dry & Wet events). For the collected samples, general water quality parameter pH and heavy metal Cd were measured. With the coordinates of this sample points, measured values was plotted using ArcGIS to represent the distribution of pH & Cd. From the final result we can deduce that after a rainfall event pH value is increased and in dry event pH value is decreased. That is in a wet event water is to be base and in a dry event water is to be acid. With the final maps & graphs further we can say that most of the points are in acidity in every events. That is directly we can say that the water in that channel is always in acidity and polluted due to the landfill. When considering Cd we can deduce in a low rainfall intensity the pollution is little bit. And then in a medium rainfall intensity, it was high because not only the amount of rain, specially the time to be taken for the rainy that is rainfall speed causes for the pollution. But in high rainfall intensity, When I observed it wasn’t much polluted. Because with the high speed of rainfall and the flowing speed of water in the channel, the contaminants was added to the water and flowed to the downward of the channel passing considering points. Finally we can say with the rainfall, the water of this channel is more polluted and by flowing the contaminants are spread to the downward of the channel network.

**Keywords:** cadmium, landfill, pH, rainfall intensity, spatial distribution