VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM-590014

A Project Report on

"SOLID WASTE MANAGEMENT"

Submitted in partial fulfillment of the requirement for the 8th SEMESTER of

BACHELOR OF ENGINEERING

IN

CIVIL ENGINEERING

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SYNOPSIS

The solid waste management has gaining emphasis because of the ill effects of open or illegal dumping of solid waste. Soil, water and air are getting contaminated due to unscientific way of dumping of solid waste. The water is only one path, which is more easily, gets contaminated by the open dumping of solid waste. The protection of ground water and surface water bodies has become complicated.

About 20 kms north of Bangalore city, close to Yelahanka town and the Yelahanka Air Force Base, there is a village called Mavallipura. With the approval of Bruhat Bangalore Mahanagara Palike (BBMP), every day since May2003, about 200 truckloads of municipal solid waste from some of the northern wards of Bangalore are being dumped on 20 acres of land belonging to one Mr. Bylappa from Mavallipura. On average, each truckload of waste weighs about 2.5 to 3 tons. The leachate from the dump is allowed to stagnate in a ditch next to the dump and slowly finds its way into surface and ground water aquifers. Over the years all drinking water sources in the vicinity have been adversely affected, and the threat looms large of contaminating the Arkavathy river , a major drinking water source of Bangalore. It is in this river basin that the Mavallipura dump is located. A dump in contrast does not have any of these provisions and therefore causes serious air, soil and water pollution.

Water pollution is the far more serious problem because the leachates seep into the ground and possibly reach the aquifers that are likely to be used as a source of drinking water (among other purposes) by people residing in the area. Theoretically, while the water from the aquifers could be treated for making it potable, in reality, the treatment processes are expensive and therefore it may not be an economically viable option to treat the water and the aquifer may have to be

abandoned if the contamination is too high for the safety of those who consume the water.

This open dumping (and burning) of garbage has resulted in serious environmental pollution including contamination of water bodies . The villagers of Mavallipura relay on groundwater in this area for their drinking water and cooking needs and face serious health consequences.

This report is an analysis of the water quality in this area (based on water samples taken here), by the contaminants present in this water. The principle objective of water quality testing undertaken by us is to examine if there has been a contamination of groundwater sources due to the all the waste that is being continuously dumped on Bylappa's land.

This examination is necessary because the villagers use water from underground reservoirs for drinking and the contamination of these sources could pose a health hazard. The water quality test gives an estimate of the level of contamination in the ground water sources of drinking water and this is useful in assessing the risk of health hazard to the villagers of Mavallipura.

To study the impact on water from the leachate produced from the dumped MSW is carried out by collecting 6 water samples in and around the dump site. The samples were collected from the selected stations in the study area on the basis of drainage pattern and the topography of the area. The samples of water were analysed in the Environmental Engineering laboratory DSCE. The parameters analysed are pH, DS, DO, BOD, Turbidity, Cl, TH, Ca, Mg, NO_3 and Fe.

Based on the analysis, it can be concluded that the water in and around the dump site is getting contaminated with the leachate produced by the MSW.