ABSTRACT

Kenya is a significantly stressed country in the aspect of water supply. There is a great concern of water scarcity, population increase, underdeveloped resources, climate change and economic development which significantly contribute to the issue of supply and consumption faced by Kenyans. Water scarcity places the country at a disadvantage when needed to supply the consumption requirements of the country. Also, there is a steady increase in the country‟s population which calls for a greater supply of water as more people need water for basic needs. In addition to this, climate change is further aggravating the depletion of resources and overall water scarcity. These issues therefore need to be addressed in order to resolve the water crisis in the country.

The aim of this project was to assess whether the water from Nairobi River can be treated to produce water for domestic use. Samples were collected from two sampling points; Chiromo campus and the Museum Hill. Collection of the samples was done on three separate occasions at an interval of 14 days. The samples were then taken to the University of Nairobi PHE laboratory for testing. Important physical, chemical and biological parameters were tested in order to establish the water quality of the river. The results obtained were analyzed and compared to established surface water quality criteria by WHO and Kenyan Standards for natural water courses.

The results obtained indicated that the levels of total hardness, pH, alkalinity, dissolved oxygen, chloride, fluoride, nitrates, color and total dissolved solids were acceptable. However, the levels of iron, turbidity and total suspended solids were above the recommended limits. Furthermore, the water was found to contain a high coliform count.

It was observed that human activities along the river with encroachment to the banks severely impacted the river water quality. The study concluded that the water upstream of Nairobi River can be treated. This is because the water on the upstream side was more physically polluted as compared to chemically polluted. On the downstream side, the river was badly polluted hence treatment will not yield portable water.