ABSTRACT

Groundwater is the water trapped underground in geological formations called aquifers and is tapped by humans, through boreholes or shallow wells, for their domestic or industrial purpose; therefore its quality is paramount. It is replenished through a process called recharge.

Groundwater recharge is a hydrologic process where water moves down from surface water to groundwater. Recharge is the main method through which water enters an aquifer. The quality of the surface water will therefore have a huge impact on the quality of the groundwater. The mineral composition of the underlying rocks will also impact the quality of the groundwater.

This study was carried on three boreholes in Syokimau that are close to a reservoir located in the area. Water analysis tests were carried out on the four borehole sources of water to find out if there was relationship between the quality of the groundwater in the area and that from the reservoir. This was as a result of complaints from water consumers that the borehole water was salty. A theoretical geological study of the area was also carried out to determine the nature of the rocks that are in the area.

The quality parameters of the borehole water were found to be comparable to those from the reservoir. It was concluded that the groundwater quality is solely due to surface water quality changes as it seeped through the rock formations in the area. Overall the quality of the ground water satisfied the WHO standards in all aspects apart from two parameters, fluoride and iron, that exceeded the required standards and were believed to be the ones responsible for the salty taste.