Groundwater is an essential resource in this area and this importance increases in the light of the rapid increase in human population, industrial expansion, and agricultural activities. The geology of the area is comprised of Tertiary volcanic rocks, which include phonolites and basalts. These are overlain by recent alluvial deposits and soil composed of sands, clays and gravel. The influence of faults, joints and other fractures on groundwater in the study area is two way. They act as drainage channels of groundwater flow and also as aquifers in the area. The area receives groundwater recharge from Nandi Hills and Mau Hills Complex which are to the east and flow is towards the lower areas to the west. The soil retains water for an extended period of time after the rains and this partly recharges aquifers in the area.

The proposed project reviews the status of groundwater setting and endeavors to establish groundwater potential zones, distribution and producing a groundwater potential map. This study involves review of previous geological, hydrogeological reports and geological maps, analysis and re-interpretation of pre-existing borehole data logs has been conducted through spatial and graphical analysis to determine the groundwater potential zones and distribution in the area.

The study area has been found to have varied groundwater potential namely high, medium and low. From the groundwater potential map produced during the data analysis part of this research the high groundwater potential zone is depicted as a corridor of aquifer within the Nyanza graben marked alternating zones of medium and low potential. Most of the existing boreholes are located in a high to medium potential areas while only a few are located in the low potential zones.

The delineation of groundwater potential zones will help in prioritizing key areas for groundwater development. This will supplement water from the rivers, springs, lake and roof catchment and therefore reduce the problem of water shortages.