

ON-SITE POLLUTION TO SHALLOW WELLS IN URBAN AREAS: A CASE STUDY OF ABEOKUTA IN NIGERIA

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ABSTRACT

Groundwater contamination from on-site sanitation is a particular problem in densely populated areas of Nigeria where the underlying rocks are fractured basement complexes serving as aquifers. In twenty-four wells that were studied at Abeokuta, the water quality parameters examined varied with the depth and distance of each well from an on-site sanitation system. In gross features, the bacteriological qualities as measured by Coliform count per millilitre showed significant negative correlation of 0.74 and 0.6 with distance from polluting source and depth of well respectively. Ninety per cent of the wells were in serious state of dilapidation and, nearly all the wells were faecal contaminated. The distance of sanitation site to each well varies between 1 to 29 meters while a mean value of 4.25m was obtained for all the wells. The study revealed the consequential effects of construction lapses as well as movement of plume from sanitation sites through rock fractures to nearby wells. The people are not aware of the inherent risks and the environmental authorities are also unable to control the indiscriminate sinking of wells especially in urban areas.

Keywords: Groundwater, Wells, Pollution, Distances, Water quality.