

ASSESSMENT OF GROUND WATER QUALITY IN LOW INCOME HIGH DENSITY AREAS OF KADUNA METROPOLIS

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ABSTRACT

Water is essential for life and bloodstream of the green economy. Lack of access to clean drinking water adversely affects the public health on many developing countries like Nigeria. Population growth, expanding cities and accelerating economic activity create unsustainable pressure on our water resources. Kaduna metropolis is a city undergoing rapid expansion in economics growth and urbanization. One of the challenges of this growth is pressure on public water supply. As in most developing countries, public water supply in Kaduna is erratic and inadequate for local consumers. Consequently, majority of the local population relied on underground water for domestic and commercial applications. The quality of underground water in the metropolis is rarely assessed. This study investigated underground water quality in high density low income areas of the metropolis. A combination of Physico-chemical and bacteriological parameters were used to analysed the quality of ground water samples collected from hand dug wells and bore holes across the metropolis. Generally, over 65% of samples were contaminated by coliform. Results indicate higher bacterial counts in hand dug wells than bore holes. While the pH of the samples varied widely, physico-chemical analysis showed over 90% of water samples were in conformity with Nigerian Standard for Drinking Water Quality (NSDWQ). Although underground water in the metropolis may be suitable for commercial and industrial applications, human consumption is only recommended after treatment to eliminate coliform risk. Protection of shallow wells and boreholes is strongly advised.

Keywords: Kaduna metropolis; Water quality; Water standards