**ABSTRACT**

Borehole water remains an essential component of everyday living. Although with an immense benefit, natural and anthropogenic activities have grossly deteriorated its availability in urban areas in Nigeria. Specifically in urban environment, effluents discharge from industries, abattoir waste disposal and pesticides usage alters water quality increase risk associated with usage. This study assessed the water quality index of borehole water in Isoko-North Local Government Area of Delta State, Nigeria, as a means to determine overall state of water, influence of season and health risk. This study employed standard laboratory technology in assessment of water samples collected from Ozoro, Ellu, Emevor, Otor-Owhe, Owhellegbo, Ofagbe, Ovrode, Otor-Igho, Igbuku-Owhe and Erawha across two seasons (dry and wet seasons). Nineteen (19) water quatilty parameters (pH, turbidity, temperature, Electrical conductivity, total dissolved solids (TDS), total hardness, bicarbonate, carbonate chloride, sulphate, phosphate, nitrate, fluoride, calcium, magnesium, sodium, potassium, iron, total coliform) were evaluated. The findings indicated that the water quality at Ozoro (1 and 2) and Ofagbe are good and remains unchanged for both seasons. However, water quality at Otibio, Erawah, Ovrode, and Otor decreased in quality (Good to poor) according to season. As for other assessed locations (Ellu, Owhe) water quality depreciated also due to contamination of water reservoir by both natural and human activities. The hazard quotient was found to be <1.00 which indicates that exposure risk to borehole water via ingestion for both adults and children were low. Exposure level ranged <30% across both seasons. It can also be concluded that season plays a major role in quality of borehole water increase ion concentration in water and dissolution of iron into water which may present risk of bioaccumulation overtime. It is recommended that borehole water from these locations should be subjected to primary water treatment processes before use so as to favour pH levels and minimize iron concentrations.