communities of the Eastern Cape Province, South Africa

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Abstract

The domestic raw water sources in Nkonkobe and Gogogo were characterised by using both microbiological and standard physical methods to investigate the quality of the water at the sampling sites. For microbiological analysis, indicator bacteria namely, heterotrophic bacteria, total and faecal coliforms and for physical parameters, pH, turbidity and temperature were assessed to check whether the distributed water as well as the water from dams, and rivers was safe for drinking and other domestic uses. The water quality parameters of concern were microbial contamination and turbidity. Almost all the indicator bacteria counts and turbidity values were above the South African recommended limits. Both Nkonkobe and Gogogo raw water sources had a poor water quality. The water was unfit for human consumption without prior treatment. The quality of the water source depended on local conditions. This indicated that poor sanitation and hygiene conditions and lack of, or little environmental awareness among the people in rural areas, could be considered as the major causes of source water contamination.

Keywords: water quality, coliform bacteria, heterotrophic plate count, rural communities, pH, turbidity, and temperature.

Introduction

The lack of safe drinking water and adequate sanitation measures lead to a number of diseases such as cholera, dysentery, salmonel-

goal of water quality management from a health perspective is to ensure that consumers are not exposed to doses of pathogens that are likely to cause disease. Protection of water sources and treatment of water supplies have greatly reduced the incidence of these