

Title: WATER QUALITY IN PRIVATE WELLS USED FOR HUMAN CONSUMPTION

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Abstract:

The access to potable water is fundamental for human health because it is a possible way to the spread of diseases, especially for children, the elderly and immunocompromised patients. Negligence in the quality control of private wells is still common among consumers. Human activities can lead to contamination of groundwater, therefore the confined aquifer, making necessary analysis to control the potability. The aim of the study was evaluating the presence of microorganisms to analyze the potability of water in private wells for human consumption in the towns Itaporã and Caarapó, MS, Brazil. The study was conducted from July to September of 2014, which analyzed randomly, 30 wells in Itaporã and 36 in Caarapó. The water samples were collected in sterilized bottles. The test for the presence of total coliforms and *Escherichia coli* were performed by the technique of presence and absence of chromogenic and fluorogenic substrate Colilert[®]. In which, 100 ml of sample was added to the substrate in the vial analysis and incubated at 35 ± 0.5 °C for 24 ± 2 hours. The criteria for interpretation of Colilert[®] determine that: the yellow color indicates the presence of total coliforms and fluorescence under ultraviolet light of 360 nm indicates the presence of *E. coli*. on the total sample, 61% were contaminated for total coliforms and 33% for *E. coli*. in Caarapó, which had a lower contamination compared with Itaporã. The 2.914 ordinance from 2011 of the Ministry of Health established as potability standards the absence of *E.coli* and total coliform in 100ml of water. Many wells presented contamination by total coliforms and *E. coli*, therefore, did not meet national and international standards for water potability for human consumption, showing that treatment measures should be taken to avoid possible waterborne diseases.

Keywords: Coliforms; Wells; *Escherichia coli*; Contamination.