

AN EXECUTIVE SUMMARY OF THE FINAL REPORT OF WORK DONE ON THE MINOR RESEARCH PROJECT OF CHEMICAL AND MICROBIOLOGICAL CHARACTERISTICS OF GROUND WATER OF MANGALORE CITY SANCTIONED BY UGC, VIDE SANCTION LETTER NO MRP(S)-268/08-09/KAMA002/UGC-SWRO dated 03-04-2009

EXECUTIVE SUMMARY OF THE PROJECT

Water samples were collected from 25 locations which involve 15 dug wells and 10 borewells. The various chemical and biological parameters were studied using standard procedures. The interpretation of data has been made with the help of statistical tools.

It is observed that the pH of the water varies from slightly acidic to slightly alkaline (5.87 to 7.22) and only minor fluctuation in pH was recorded. The pH levels were within the limits set for domestic use as prescribed by APHA Physico-Chemical and Microbiological Analysis of Under Ground Water. The WHO has suggested a limiting value of 500mg/L of TDS for potable water. In the present investigation this limit is not crossed on either side by any of the samples under study. The waters of the remaining samples have registered handsome values of TDS (114 – 158). These values are acceptable for domestic use and agricultural purposes. An overwhelming value of TDS has also increased the conductivity values of the different water samples.

The summation of calcium hardness and magnesium hardness is regarded as the total hardness of water. In the present investigation, it has been observed that the calcium and magnesium hardness is well within the permissible limits. Only in the case of borewell sample BW6 it crosses 200mg/L..

A significant presence of anions like chloride and sulfate is also observed in the water samples under investigation. It has been observed that greater amount of sulfate in drinking water causes diarrhea. The chloride and sulfate amounts in the samples range from 2-18 mg/L and 0.7-14.3 mg/L respectively. Here it is observed that the sulfate and chloride concentration in the samples fall well within the permitted values of WHO and ISI.

Dissolved oxygen present in drinking water adds taste and it is highly fluctuating factor in water. In this study dissolved oxygen content varied in a limited range of 8.6 to 22.2. This values are little higher than that expected for a good quality potable water.

All water samples donot contain significant amount of organic matter that provides nutrition for the growth and multiplication of microorganisms. Hence there exist very low microorganisms. The very low values of total Coliform and faecal coliform are indicative of purity of water and there is no pollution of the water by organic means particularly through the discharge of sewage and domestic effluents into the dug well or borewell.

The present investigations has led us to conclude that the quality of water samples subjected to study was acceptable from majority of physico - chemical parameters and bacteriological standards.

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