

**VARIATION OF GROUND WATER QUALITY TRENDS
A CASE STUDY FROM SAMMANTHURAI WELL, SRI LANKA**

A PROJECT REPORT PRESENTED

BY

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to the

POSTGRADUATE INSTITUTE OF SCIENCE

*in partial fulfillment of the requirement
for the award of the degree of*

MASTER OF SCIENCE

of the

**UNIVERSITY OF PERADENIYA
SRI LANKA**

JANUARY 2002

ABSTRACT

For the last two decades quality of water has been a very impotent issue in Sri Lanka in terms drinking, agricultural and industrial use. However research works done on water quality is very few. Further it is very few in the northeastern region. Therefore in this study an attempt has been made to analyze the changes in some important water quality parameters with time and depth in a selected well in the Sammanthurai area of the Ampara district.

From the selected well, water samples from the top, middle and bottom layers of the well both were collected in the morning 8 A.M and evening 8 P.M once a month from January to March 2001. Water quality parameters such as colour, odour, turbidity, conductivity, pH, temperature, total solids (TS), total dissolved solids (TDS), dissolved oxygen (DO), chemical oxygen demand (COD), total alkalinity, total hardness, nitrite, nitrate, chloride, sulphate, phosphate, fluoride, calcium and magnesium were measured using standard methods and apparatus. Finally the obtained values of the each parameter have been compared with the standard values.

Most of the parameters were showing lowest values in February. Further, averages of the parameters were varying differently with standards. When compared with maximum permissible level, all the parameters except nitrite, COD and phosphate were less than maximum permissible level and with highest desirable level all the parameters except sulphate were more than highest desirable level. However, the samples obtained from all the layers were found to be colourless, odourless but slight difference in taste. Therefore, it may be stated that there is no much harm in using this water for urgent or short term drinking purpose.