

Groundwater Quality Monitoring and Evaluation In District Haridwar, U.P.

C. K. Jain, Daya Ram and K. K. S. Bhatia

ABSTRACT

The physico-chemical characteristics of ground water in different villages of district Haridwar, Utter Pradesh, have been studied during 1995 to examine the suitability of water for irrigation and domestic applications. Twenty five water samples representing the shallow ground water of the area were collected and analysed for various constituents, viz., pH, conductance, total dissolved solids, alkalinity, hardness, chloride, sulphate, phosphate, sodium, potassium, calcium and magnesium. Higher values of certain constituents at few places indicate the water is not suitable for domestic applications. From the hardness point of view, more than 50% of the total samples analysed belongs to hard water category. The values of sodium adsorption ratio indicate that ground water of the area falls under the category of low sodium hazards.

An attempt has also been made to classify the quality of ground water on the basis of Stiff, Piper trilinear and U.S. Salinity Laboratory classifications. As per the Stiff classification, most of the samples were found to be of either calcium or magnesium bicarbonate type. In the Piper trilinear diagram, majority of the groundwater samples of the study area fall in the Ca-Mg-HCO₃ hydrochemical facies. According to the U.S. Salinity Laboratory Classification of irrigation water, most of the samples fall under water type C2-S1 (medium salinity and low SAR) and C3-S1 (high salinity and low SAR). It is recommended that any water source must be thoroughly analysed and studied before being used for domestic applications and proper water management strategies should be adopted for agricultural and other developmental activities.

आपो हि ष्टा मयोभुवः