

## Groundwater Quality Evaluation in Doon Valley, Dehradun

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### ABSTRACT

The ground water quality of Doon valley, Dehradun has been studied during 1996 to examine the suitability of water for drinking and irrigation purposes. Twelve water samples representing the shallow ground water of the valley were collected during pre-monsoon and post-monsoon seasons and analysed for various constituents, viz., pH, conductance, total dissolved solids, alkalinity, hardness, chloride, sulphate, phosphate, sodium, potassium, calcium and magnesium. The data was analysed with reference to BIS and WHO standards, ionic relationships were studied, hydro chemical facies were determined and water types were identified. The results of the study provide information needed for ground water quality management in the valley. 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, majority of the samples were found to be of calcium bicarbonate type. In the Piper trilinear diagram, majority of the groundwater samples of the study area fall in the Ca-Mg-HCO<sub>3</sub> hydro chemical facies. As per the U.S. Salinity Laboratory Classification of irrigation water, the water is fit for irrigation purpose.

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