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Geochemistry of Groundwater in the Sedimentary Terrain around Devak and Rui Watersheds, Jammu and Kashmir, India

AS JASROTIA[1], RAJINDER SINGH[1] and N SUBBA RAO[2]

(1) Post Graduate Department of Geology, University of Jammu, Jammu -180 006, India
(2) Hydrogeology Laboratory Department of Geology, Andhra University Visakhapatnam – 530 003, India

Groundwater quality survey has been carried out in the sedimentary terrain of Devak and Rui watershed, Jammu and Kashmir, India. The area enjoys sub-tropical to moist temperate climate with the average temperature of 2^0 C -20^0 C in winter to 33^0 C- 47^0 C in summer. The sedimentary rocks include the sandstone, mudstone, shale, silt and clay. WATEQ computer programmer was used to compute the ionic activities, using the Debye - Huckel and Davis equation and the mineral saturation index (SI) for $CaSO_4$. The average silica activity is$10^{-3.87}$ Kaolinite is the stable phase. Results of the work suggest that the geochemistry of groundwater in the terrain is probably, controlled by the incongruent processes and dissolution of carbonate minerals that control the chemistry of groundwater. The ability of soil to take up the ions during the pre-monsoon period results from the formation of new clay minerals and precipitate of calcite due to the leaching from the soils occurred to a greater extent in the post-monsoon period.

Keywords: Groundwater; geochemistry; sedimentary terrain; Devak and Rui Watersheds; Jammu and Kashmir