

Evaluation of Groundwater Quality in North-West Region of Punjab, India

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Abstract : The district of Tarntaran is located 25 km south of Amritsar city in Punjab State of Northwestern India. It is 5059 Sq. Km in area. It is surrounded by Amritsar in the North, Kapurthala in the East, and Ferozepur in the South and Pakistan in the West. Patti Town is a municipal council of the Tarntaran district of the Indian state of Punjab, located 45 km from Amritsar its geographical coordinates are 31° 16' 51" north to 74° 51' 25" East Longitude. The town spreads over an area of 50sq. Km. Moisture content is very less in the air, falling within the semiarid region and frequently facing water scarcity as well as water quality problems. The major sources of employment are agriculture, horticulture and animal husbandry engaging almost 80% of the workforce. Water samples are collected from 400 locations in 20 villages on the Patti -Khem Karan highway with 20 samples from each village, and were subjected to analysis of chemical characteristics. The type of water that predominates in the study area is Ca-Mg-HCO₃ type, based on hydro-chemical analysis. Besides, suitability of water for irrigation is evaluated based on the sodium adsorption ratio (SAR), residual sodium carbonate, sodium percent and salinity hazard. Other Physico-chemical parameters such as pH, TDS, conductance, etc. were also determined using a water analysis kit. Analysis of water samples for heavy metal analysis was also carried out in the present study.

Keywords : groundwater, chemical classification, SAR, RSC, USSS diagram

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