

Research Article

Assessment of physical status of ground water samples in Kanpur Metro, U.P.

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Article Chronicle : 17.04.2012; Revised : 01.05.2012; Accepted : 31.05.2012

SUMMARY: The present work was undertaken to analyze the different water quality parameters, *viz.* pH, electrical conductivity (EC), total dissolved solids (TDS), total alkalinity (T.alk.) and total hardness (TH). Ground water samples were collected from different residential areas of Kanpur city, U.P. (India). The results were compared with the values stipulated by World Health Organization (WHO) for drinking water quality. It was found that the ground water was contaminated at few residential areas, while others showed physical parameters within the water quality standards and the quality of water was good and it was fit for drinking and irrigation purpose.

HOW TO CITE THIS ARTICLE : Singh, Brajpal, Khurana, S.C., Kumar, Manish, Yadav, Neelam, Yadav, Renu and Yadav, Ranjana (2012). Assessment of physical status of ground water samples in Kanpur Metro, U.P. *Asian J. Environ. Sci.*, **7** (1): 100-103.

Key Words :

Water characteristics, Physical parameters, Potable water, Ground water evaluation

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Protection and management of ground water quality are emerging as a great public concern in India. People are becoming more conscious about the nature of ground water and its usage; regarding its future utility which is not only affected by our human activities but also by its current uses of extravagance and over expectation especially in urban areas. Recently there was a great hue and cry about presence of pesticide residues in bottled mineral water is obtained from ground water, then processed and packed.

A result of urbanization is the increase in demand and creation of potential with possibility of ground water pollution. A number of studies in the past have an impact on the quality of ground water. A similar situation is being encountered in most of the metropolitan cities with growing urban centers. Ground water contaminated from aforesaid sources is injurious to human beings if it does not satisfy the prescribed drinking water standards. It is essential to demarcate the potable and non-potable ground water zones based on desirable and maximum permissible limits of various physico-chemical parameters for implementing necessary remedial measures to prevent the occurrence of adverse conditions.

Kanpur, the major industrial town of Uttar Pradesh, is infested with industries like tanneries, cloth mills, foundries, chemicals factories etc. Untreated effluents from these sources and domestic sources not only pollute surface water but also percolate down to ground water adversely affecting its physico-chemical and biological characteristics. So, the present research work has been undertaken in an attempt to study the extent of diffuse pollution that has threatened the existing ground water resources and to use the data so obtained in prediction and protection of this invaluable resource.

Studies regarding the ground water quality analysis have been made by many authors like Singh and Kapoor (1989), Ravichandran and Pundarikanthan (1991), Latha *et al.* (2002), Gupta and Saxena (1996), Gupta and Gupta (1999), Rajasekara Pandian *et al.* (2005). They concluded