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Suitability Analysis of Ground and Surface Water Quality for Domestic Purpose along Upstream Side of Coimbatore City

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Abstract : Water is essential for life and access to clean drinking water is a necessity for good health. However, clean drinking water is not available everywhere, due to water scarcity and pollution of existing water resources. The pollution can be in the form of natural or anthropogenic activities. This study focuses on the Impact of anthropogenic activities on the water quality of 4 tanks in Coimbatore city and its contribution to the groundwater quality. Due to encroachment and other anthropogenic activities, the quality of water is being depleted rapidly. Disposal of municipal waste and waste from other various industries into the tank depletes the quality of water in the tank. This water along with the leech ate may percolate through the pore spaces between the soil particles and interact with the groundwater. Because of this interaction the quality of groundwater will also be affected. The contaminants will be transported and contribute to the nearby well head and affect the quality of water in the well too.. This spatially interpolated water quality map was helpful in understanding the variation in quality of both surface and groundwater with respect to space. Visual MODFLOW incorporated with MT3D was used to simulate the groundwater flow. The direction of groundwater flow was obtained as output from MODFLOW. The direction and magnitude of the contaminant transport was obtained as output from MT3D. In this study, chloride has been chosen as contaminant transport parameter. Semi-structured interview was conducted in the study area to study about the source for drinking water, method of waste disposal and spread of disease among the people residing nearby the tank.

Keywords : MODFLOW, MT3D, Contaminant, Magnitude, anthropogenic.

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