

ENVIRONMENTAL IMPLICATIONS OF HEAVY METAL POLLUTION INDEX FOR WATERS OF EASTERN PART OF PENCH VALLEY COALFIELD AREA, DISTRICT - CHHINDWARA (M.P.) INDIA

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The concept of Heavymetal Pollution Index (HPI) represents, the overall quality of water with respect to selected parameters. Quality indices usually employed to get a composite influence of all parameters on overall pollution. The heavy toxic metals present in surface and sub-surface waters in parts of Pench Valley Coalfield indicate that toxic metals are not universally present in all the samples and in many cases their concentration is below detectable limit. To know the overall impact of heavy metal contamination on waters of Pench Valley area, HPI values have been calculated after Mohan et al. (1996). The proposed index is intended for drinking water and the permissible pollution index (P) value is 100. The study reveals that concentration of heavy metals like As, Cd, Cu, Fe, Hg, Mn, Pb and Se, when considered for the determination of HPI, the 'P' value exceeds far above 100 for all the water samples of the area. Therefore, the waters of eastern part of Pench Valley coalfield area is not safe for drinking purpose. Ingestion exposure to polluted waters may caused variety of carcinogenic and noncarcinogenic diseases to the people of the area. In the present paper health hazards related to exposure pathway to above toxic metals have been discussed in detail.