

Impact of Groundwater Pollution by Landfill using Leachate Pollution Index

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Unsystematic, disorderly and irrational dumping of municipal solid waste is a very common disposal method in most of the developing countries like India which can lead to the various environmental issues like ground water pollution, air pollution and contamination of soil. Municipal solid waste is mainly composed of organic fraction which when undergoes series of physical, chemical and biological reactions may lead to the production of contaminated brown liquid “leachate”. This liquid is composed of organic, Inorganic and hazardous chemical which can percolates to the subsoil thereby contaminating the surrounding groundwater resources. High concentration of the organic, inorganic component in the leachate form a contaminated plume and can pose risk to user of groundwater. Keeping this in view, present study is conducted to estimate the overall pollution potential of landfill leachate by using Leachate Pollution Index(LPI) of tricity landfill site i.e. Dadumajra, Mohali and Panchkula. Leachate samples were collected from all the three landfill sites. Samples are analyzed for physio-chemical and microbiological parameters and LPI was calculated. LPI value of Dadumajra landfill leachate found (30.13) which are higher than LPI value of Mohali (26.8) and Panchkula (21.66). Results drawn in present study demonstrate that LPI value of all the landfill sites is higher than the acceptable limit i.e.7.378, which indicates that leachate from landfill site under study has significant potential to contaminate the groundwater resources and needs suitable remedial measures on priority basis.