

**Monitoring of Ground Water Pollution from Sewage Waste in
Bhadrabad, Hardwar**

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ABSTRACT

Many and diverse men's activities produce innumerable waste materials and by products. Disposal of these waste materials is becoming a major problem world over. A wide variety of solid wastes from industries, residences and municipalities is disposed off on the land, whereas, liquid waste is disposed either over or below land surface. The disposal of wastes, whether on surface or subsurface, pose a serious threat to groundwater quality.

Municipal sewage water may contaminate the groundwater through (i) leakage from collecting sewers, (ii) leakage from the treatment plant during processing, and (iii) land disposal of the treatment plant effluent. In addition, it can also contaminant the groundwater indirectly through sewage disposal to surface water bodies which recharge aquifers, and land disposal of sewage as irrigation water.

In the present report, an attempt has been made to assess the effect of municipal sewage waste disposal from Bharat Heavy Electrical Limited, Hardwar on quality of groundwater in the Bahadrabad area. Sewage waste water is being collected in storage tanks and then spread over an area of about 15 sq.km as irrigation water.

Water samples from nine sites including two from sewage waste, two from shallow dug wells, four from hand pumps and one from deep tube-well have been collected in pre-monsoon and post-monsoon seasons. The samples were analyzed for routine physical and chemical parameters. The results of the analysis indicate that the waste disposal has started contaminating the shallow groundwater, though the magnitude of contamination is low. Further, the analysis shows that both the shallow and deep groundwater of the area is safe for drinking purposes.