

**Hydro-chemical studies of Hindon river**

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**ABSTRACT**

A detailed survey of the river Hindon was carried out to understand the nature of waste effluents and their impact on the water quality of river Hindon. From the study conducted, it is found that the water of the river is subjected to varying degree of pollution, caused by numerous untreated waste outfalls of municipal and industrial effluents. The main sources, which create pollution in river Hindon include municipal waste of Saharanpur, Muzaffarnagar and Ghaziabad districts and industrial effluents of sugar, pulp and paper, distilleries and other miscellaneous industries through tributaries as well as direct outfalls. In non-monsoon months the river is completely dry from its origin upto Saharanpur town. The effluents of Nagdev nala and Star Paper Mill at Saharanpur generate the flow of water in the river.

The dissolved oxygen content in the upstream section of the river was found to be quite satisfactory, however, a critical situation was observed after the confluence of paper mill and distillery effluents. The effluent of pulp and paper mill and distillery added high concentration of organic matter to the river, which is responsible for the decrease in dissolved oxygen alongwith increase in BOD, COD and TDS alongwith other factors. In the middle section of the river, the dissolved oxygen level improves significantly due to the reaeration and photosynthesis. In the lower stretch, the dissolved oxygen shows a large variation depending on the flow of the water in the river and is controlled by the discharge of water from Upper Ganga Canal through Khatauli and Jani escapes. The maximum concentration of ammonia was found after the confluence of Dhamola nala, which is carrying the municipal waste of Saharanpur town and has significant flow throughout the year.

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