

*Perspective*

## Note on sewage water pollution

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### DESCRIPTION

Water pollution is also known as the release of pollutants into underground groundwater, streams, lakes, estuaries, rivers, and seas to the point when the particles obstruct beneficial ecosystem or water usage function. In addition to the release of chemicals or germs, water pollution can entail the discharge of energy, such as radiation or heat, into bodies of water.

#### Sewage and other water pollutants

Pathogenic bacteria, putrescible organic waste, plant nutrients, poisonous compounds, sediments, heat, petroleum oil, and radioactive substances are all examples of pollutants that can pollute water bodies. Several types of water contaminants are discussed in the following sections.

#### Domestic sewage

Pathogens disease-causing bacteria and putrescible organic compounds are primarily found in domestic sewage. Due to the term it is known that the infections are excreted in faeces, all sewage water pollution from towns and cities is likely to contain pathogens of some variety, posing a direct threat to human health. Putrescible organic debris, on the other hand, poses a unique threat to water quality. The dissolved oxygen level of the water is decreased as organics degrade naturally in the sewage by microorganisms and other microbes. This jeopardises the quality of lakes and streams, where fish and other aquatic species rely on high oxygen levels to thrive. Sewage treatment procedures minimise pathogens and organics in wastewater, although they are not completely eradicated. Plant nutrients, primarily nitrates and phosphates, are also abundant in sewage. Excess nitrates and phosphates in water encourage algae growth, resulting in algal blooms, which are extremely

dense and fast growths. Because microorganisms utilise oxygen to consume algae during the breakdown process, oxygen dissolved in the water decreases when algae die. Anaerobic organisms that do not require oxygen to live then metabolize the organic wastes, releasing gases such as methane and hydrogen sulphide, which are harmful to the aerobic requiring forms of life. Eutrophication is the process by which a lake transitions from a clean, clear state with a low concentration of dissolved nutrients and a well-balanced aquatic ecosystem to a nutrient-rich, algae-filled state, and then to an oxygen-deficient, waste-filled state. Eutrophication is a slow and inevitable process that occurs naturally. When it is exacerbated by human activity and water pollution a phenomena known as cultural eutrophication, however, it can cause a body of water to age prematurely and die.

#### Groundwater and oceans

For many people, groundwater is the water contained in subterranean geologic formations known as aquifers which is a source of drinking water. In the United States, for example, roughly half of the population relies on groundwater for their residential water supply. Despite the fact that groundwater seems to be perfectly pure due to natural filtration as it runs slowly through layers of soil, it can still be contaminated by dissolved chemicals, bacteria, and viruses. Subsurface sewage-disposal systems industrial wastes disposed of in improperly lined or unlined landfills or lagoons, leachates from unlined municipal refuse landfills, mining and petroleum production, and leaking underground storage tanks beneath gasoline service stations are all sources of chemical contaminants. In coastal areas increased groundwater withdrawal due to urbanisation and industrialization can cause saltwater intrusion as the water table drops, seawater is drawn into wells.

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