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Editorial

A BRIEF NOTE ON WASTE WATER TREATMENT AND ITS TREATMENT PLANTS

ZHAO CAI*

Department of Biotechnology, North China University of Science and Technology, Hebei, China

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EDITORIAL NOTE

Wastewater treatment is the process of removing contaminants from wastewater and changing it into an effluent that may be reused back into the water cycle. Once returned to the water cycle, the effluent has a low impact on the environment or can be reused for a variety of purposes (called water reclamation). A wastewater treatment plant is where all the treatment takes place. Different kinds of wastewater are treated at wastewater treatment plants of the proper type. The treatment plant for domestic wastewater (also called municipal wastewater or sewage) is characterized as a sewage treatment plant. The treatment of industrial wastewater takes place in either a separate industrial wastewater treatment plant or a sewage treatment plant (usually after some form of pre-treatment). Agricultural wastewater treatment facilities and leachate treatment plants are several kinds of sewage treatment plants, Shakir, et al. [1-3].

Glass transition (such as sedimentation), biological or chemical processes (such as oxidation), and polishing are all common processes. A type of sludge that is usually treated in the same or another wastewater treatment plant is the main by-product of wastewater treatment plants. If anaerobic treatment processes are used, biogas is produced as a by-product, Huang, et al.[4]. some wastewater can be treated completely and reused as recovered water. The main objective of treating wastewater is to ensure sure treated wastewater could be safely disposed of or reused. However, before it is treated, the options for disposal or reuse must be considered so the wastewater is treated properly, Lee, et al.[5].

In the literature, the term "wastewater treatment" is often exchanged for "sewage treatment." In a formal sense, wastewater treatment varies, unlike sewage treatment.

TYPES OF TREATMENT PLANTS

***Corresponding author's email**: Zhaocai12@mail.edu.cn

Sewage treatment plants

Sewage treatment (as well recognized as domestic wastewater treatment or municipal wastewater treatment) is a type of wastewater treatment that means removing contaminants from sewage to produce an effluent that is suitable for discharge to the environment or reuse, preventing water pollution from raw sewage discharges. Sewage is made up of wastewater from businesses and homes, as well as possibly pre-treated industrial waste. There are numerous sewage treatment processes from which to choose. Decentralized systems (including on-site treatment systems) to huge traditional centralized involving a network of pipes and pump stations (known as sewerage) that transport sewage to a treatment plant are instances, Das, et al. [6]. The sewers will also carry urban runoff (storm water) to the sewage treatment plant in cities that have a combined sewer. Sewage treatment typically consists of two stages: secondary treatment, with a tertiary treatment stage that involves polishing operations, and nutrient removal included in advanced treatment. Using anaerobic or aerobic biological processes, tertiary treatment reduces organic material (expressed as organic load) in sewage.

Industrial wastewater treatment plants

The processes used to treat wastewater produced as an unwanted by-product by industries are known as industrial wastewater treatment. The treated industrial wastewater (or effluent) could be reused or released into a sanitary sewer or surface water in the environment after treatment. Sewage treatment plants can treat wastes produced by some industrial facilities, Fan, et al. [7]. Most industrial processes, such as petroleum refineries, chemical, and petrochemical plants, have their own specialized facilities for treating their wastewaters so those pollutant concentrations in the treated wastewater meet the regulations for wastewater disposal into sewers, rivers, lakes, or oceans. This is relevant for industries that generate wastewater containing high levels of organic matter (e.g., oil and grease), toxic pollutants (e.g., heavy metals, volatile organic compounds), or nutrients (e.g., ammonia). Some businesses use a pre-treatment system to remove some pollutants (such as toxic compounds) prior dumping the partially treated wastewater into the municipal sewer system.

Agricultural wastewater treatment plants

Agriculture treatment of wastewater is a farm management strategy to reduce pollution from confined animal operations and surface runoff contaminated by fertilizer, pesticides, animal slurry, crop residues, or irrigation water. Continuous confined animal operations, including such milk and egg production, require agriculture wastewater treatment. This can be done out in plants having mechanical treatment units similar to those used in industrial wastewater treatment. Ponds, settling basins, and facultative lagoons may have reduced operational costs for seasonal use conditions from breeding or harvesting phases if the land is available. Animal slurries are usually controlled in anaerobic lagoons before even being applied to grassland as a spray or trickle. Constructed wetlands are sometimes used to help with animal waste treatment, Mai, et al. [8].

Water overflow, nutrient runoff, and pesticides are characteristics of nonpoint source pollution, Shu, et al. [9]. Animal wastes, silage liquor, milking parlour (dairy farming) wastes, slaughtering waste, vegetable washing water, and firewater are all instances of point source pollution. Many farms produce nonpoint source pollution as a result of surface runoff which is not handled at a treatment plant, Nasuha, et al. [10,11].

Leachate treatment plants

Landfill leachate is handled at leachate treatment plants. Biological treatment, mechanical treatment using ultrafiltration, treatment with active carbon filters, electrochemical treatment using patented technologies including such electrocoagulation, and reverse osmosis membrane filtration utilizing disc tube module technology are all options, Lee, et al. [12].

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