

How Wastewater Treatment Works

To understand wastewater consulting and why it is necessary, it is crucial to understand the underlying components of wastewater treatment. The Environmental Protection Agency (EPA) is tasked with overseeing pollution control and wastewater treatment.

Wastewater treatment is necessary due to the amount of pollution and bacteria that can reside within it. Now, treatment plants are necessary as the amount of bacteria increases and cannot be broken down naturally.

Stages of Wastewater Treatment

There are two stages of wastewater treatment. These stages utilize different methods, including filtration and bacteria, to help filter out any waste or pollutants so that the water can be released back into the environment without causing any harm.

Primary Stage

The initial stage of wastewater treatment is known as the primary stage and occurs when sewage enters the wastewater treatment facility. First, it goes through a screen that filters out large debris such as trash and objects that could be harmful. It then passes through a grit chamber.

Here, sand, gravel, rocks, etc., are filtered out of the waste. Then, air is slowly introduced into this chamber which helps separate heavy material from water. The material ends up sinking to the bottom of the tank, and the water goes into the next stage of treatment.

Secondary Stage

The secondary stage of wastewater treatment removes any other organic matter left in the wastewater. Facilities use either a trickling filter or activated sludge to do this. The trickling filter processes the water with bacteria that break down organic matter.

Activated sludge methods work similarly, and most facilities use this method. Here, the wastewater goes into an aeration tank, where air is pumped to promote the growth of bacteria. These bacteria then break down organic matter that resides in the sludge.

After this process, the water is almost clean enough to be returned to the environment. The final part of cleansing the water is killing the bacteria left using chlorine or UV light. Once the water undergoes this last process, it is ready to be released back into the environment.

Other Treatment Options

Today, there can be many pollutants in wastewater that are very harmful to humans and the environment. In addition, they can be challenging to filter out, causing other wastewater treatment options to grow. These pollutants typically include heavy metals, chemicals, or toxins.

These additional elements have caused a system of pretreatment to be created. This system removes these pollutants at the beginning of the pipeline to avoid them having to be removed at the end.

The processes and methods to accomplish this are quite advanced and are only in the preliminary stages of development. The system is typically biological through filtration, distillation, or reverse osmosis. Combined with the initial stages of wastewater treatment, these methods have been seen to clean wastewater effectively.

Identifying Bacteria

Companies such as Ryan Hennessy Wastewater Microbiology can be of immense help and service when evaluating the wastewater treatment process. They offer advanced microscopy evaluations to help figure out what bacteria is currently in your wastewater. With this information, you can troubleshoot and avoid any potential issues later down the line.

To contact Ryan Hennessy Wastewater Microbiology and get started, click the link [here](#) or call 920-573-2820 today for more information.