

WASTEWATER TREATMENT

Wastewater is essentially a combination of liquid or water carried waste removed from residences, institutions, as well as commercial and industrial entities. All living things generate some amount of waste. As human beings come together in closer and closer living communities, the waste generated becomes a real threat to our health and well-being. If this waste is not collected, treated and properly disposed of, it may result in damage to the environment and plant life which supports us, illness and sometimes, even death.

The three main reasons for the treatment of wastewater therefore are:

1. The protection of persons from waterborne diseases such as cholera, typhoid, dysentery, and others which may develop from contact with untreated sewage;
2. The protection of the natural environment, including the rivers, seas and coral reefs, from the damaging effects of untreated wastewater;
3. The support of important life systems and economic systems.

The National Water Commission (NWC) helps to ensure Jamaica's environmental health by collecting, treating and disposing of wastewater from the following sources:

- **Domestic Sources**
This includes Black water, which is water that contains faecal matter (from toilets and latrines); and Grey water, which is used water from washbasins and kitchen and bathroom sinks.
- **Industrial Sources**
Used water from both heavy and light commercial entities.
- **Storm water**
Runoff water from rains. In Jamaica storm water should not be allowed to flow into the wastewater sewers, although it is known to happen.
- **Infiltration**

COLLECTION SYSTEM

The National Water Commission is the primary provider of wastewater or sewage services in Jamaica and collects wastewater from over 600,000 persons across the island. As connections are made to recently completed systems in Negril, Ocho Rios, Montego Bay and along Hope Road in Kingston, the number of persons served will continue to increase.

Wastewater is collected from homes, businesses and other buildings through connecting sewer pipes called laterals. These laterals join the wastewater facilities on the private premises with those facilities constructed underneath the public roadway. The pipes along roadways are often called main or trunk sewers and allow the wastewater to flow to the treatment facility, either by gravity or with the help of pumping stations.

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There are many different ways of treating sewage but the most appropriate method for a particular area needs to be determined after careful consideration. Some of the most popular treatment methods include the use of waste stabilization ponds as well as mechanical processes that include the use of percolating filters or activated sludge.

While a variety of these systems exist in Jamaica the National Water Commission utilizes waste stabilization ponds wherever possible. This is so because waste stabilization ponds use natural processes and therefore have lower maintenance and operating costs. These ponds are also less susceptible to breakdowns and are very effective in achieving effluent quality standards.

Despite the varying methods, wastewater treatment processes are generally classified as taking the wastewater through four stages or levels: preliminary, primary, secondary, and tertiary.

- **Preliminary**
This stage simply removes the easily separated solids, usually by screening, grit removal channels. Solids to be removed usually include rags, plastics, wood and even stones.
- **Primary**
During this stage, settlement of some suspended solids takes place through sedimentation. Grit and scum are also removed.
- **Secondary**
This stage of wastewater treatment involves biological treatment through oxidation of settled sewage and/or the secondary settlement of suspended solids in the sewage. During this stage, most of the germs to be found in the wastewater is either killed or removed. The exact way in which this is achieved varies from system to system.

- **Tertiary**

This stage of treatment is usually considered to be optional and referred to as 'polishing' of the already treated effluent to further improve effluent quality.

Please do not flush cigarettes, condoms, tampons, or other sanitary or insoluble items down your toilets. These items flushed "out of sight, out of mind" end up choking our sewerage system, resulting in a back up of sewage in your homes and overflow on roadways. Also, carelessly dumping them in manholes could result in the pollution of our rivers and beautiful beaches and cause damage to our coral reefs and marine life.

The NWC has invested huge sums in sewerage systems to ensure a healthy environment for all Jamaicans. But we cannot do it alone. Your help is vital. Help us to create a better environment by properly disposing of your garbage and by connecting to our sewerage systems.

DO THE RIGHT THING ... help us to protect your health and your environment.