How Wastewater Treatment Works

What is wastewater?

When we use water in our homes and workplaces, it goes down the drain and becomes wastewater. Wastewater is mostly water, but also contains human waste, toilet paper, food scraps, soaps, fats, and other materials that go down the drain. Wastewater contains germs that must be cleaned through wastewater treatment.

Chambers Creek Regional Wastewater Treatment Plant

Pierce County's Sewer Utility operates and maintains the Chambers Creek Regional Wastewater Treatment Plant. Wastewater enters the plant, goes through numerous treatment processes and is converted to Class A solids, sold as SoundGRO fertilizer, and Class A liquids, used for irrigation and the treatment process.

Landfill

Screening

Trapped material is washed and sent to landfill

Grit Removal

Washed sand & grit to landfill

Primary Clarification

These large tanks slow down the water to allow solids to settle and oils & grease to float to the top to facilitate removal.

Wastewater

A percentage of treated water from the secondary clarifiers is routed to the reclaimed water facility which produces 'Class A' reclaimed water. This water is used for irrigation and in-plant processes which reduce the use of potable water and other valuable groundwater resources.

Reclaimed Water

At the aeration basins, the wastewater still has particles that will not easily settle. Air is pumped into the basins to promote growth of bacteria that eat and break down those suspended particles, which allows them to settle in the next step.

Aeration

DEMON ®Process

A biological system that treats the high strength wastewater generated from the fertilizer drying process.

Wastewater

Solids

Return Water

Secondary Clarifier

These circular tanks allow remaining organics and bacteria from the aeration basins to settle out of the wastewater. Those particles are sent to the digester while the wastewater goes on to disinfection.

Solids

Liquids

Solids Thickener

Water is removed from the solids using a rotary drum thickener. This step reduces the number of digesters needed and improves their efficiency.

Fertilizer Manufacturing Facility

Concentrated solids from the digesters are sent to the Fertilizer Manufacturing Facility where they are further processed, dried, and bagged as SoundGRO.

Puget Sound

Digester

Digesters further reduce the volume of collected solids using anaerobic bacteria and heat. Biogas produced in this process is used as fuel for boilers that heat the plant and is also used in fertilizer manufacturing.

UV Disinfection

Treated wastewater from the Secondary Clarifiers receive final treatment by ultraviolet light to neutralize any pathogens prior to discharge into Puget Sound.

SOUNDGRO™

An EPA 'Exceptional Quality' Class A pellet fertilizer for residential and commercial use.

Final Products

Treated Water

Treated water to Puget Sound

Pierce County
Public Works and Utilities
Sewer & Water Utilities

This graphic is for illustrative purposes only.