

Grease Glossary

Do you ever wonder what happens when the water disappears down the drain when you take a shower or brush your teeth? Over 7,400 miles of sewer pipes, 14 wastewater treatment plants and a fleet of harbor boats contribute to the elaborate system that cleans our wastewater and monitors local water quality. The following are some important terms used to describe the wastewater treatment process.

***Students:** This list of water words is to help define unfamiliar terms that you may encounter in class, readings, or on trips related to your water study. Quiz your friends with these words, and remember to research online other water words that do not appear here.*

***Teachers:** You can use this glossary as a guide to familiarize yourself with some common terminology used by the New York City Department of Environmental Protection. You and your students will encounter many of these words during classroom lessons and in readings as well as on wastewater treatment and water supply tours. A great way to introduce these words to your students is by having a vocabulary bee and making a crossword puzzle or matching game. Have fun!*

Activated Sludge – An accumulation of solid particles produced by the growth of microorganisms in aeration tanks.

Activated Sludge Process – A secondary wastewater treatment process using compressed air and bacteria to speed up the decomposition of wastes.

Advanced Treatment – Any additional treatment done to wastewater beyond secondary treatment.

Aeration – The process of adding air. In wastewater treatment, air is needed to provide oxygen to microorganisms and to keep solids in suspension.

Aeration Tank – The tank where settled wastewater is mixed with return activated sludge and aerated.

Aerobic – Life or natural processes that require the presence of oxygen.

Ammonia (NH₃) – An inorganic form of nitrogen, is contained in fertilizers, septic system effluent, and animal wastes. It is also a product of bacterial decomposition of organic matter.

Anaerobic – Life or natural processes that require an environment without oxygen.

Aquatic Community – An association of interacting populations of aquatic organisms in a given waterbody or habitat.

Bacteria – Single-celled microscopic organisms that may be used in a variety of biological treatment processes.

Baffle – A guide or similar device placed in flowing wastewater to create uniform flow velocities.

Biodegradable – A substance or material that is capable of being decomposed (broken down) by natural biological processes.

Biodiesel – Leftover cooking grease that can be used as a substitute for diesel.

Biodiversity – Refers to the variety of living organisms and the ecological complexes in which they occur.

Biological Oxygen Demand (BOD) – A measure of the amount of oxygen consumed in the biological processes that break down organic matter in water.

Biosolids (sludge) – The solid by-products of the wastewater treatment process.

Centrate – The water removed from digested sludge during the dewatering process.

Centrifuge – A mechanical device that uses centrifugal or rotational forces to separate liquids from solids during the sludge dewatering process.

City Codes – Regulations made by a city government intended to protect the city and its local environment.

Clarifier – A sedimentation tank in which wastewater is held for a period of time during which heavier solids settle to the bottom and lighter materials float to the surface.

Coagulate – The process in which a liquid substance changes into a solid or semisolid state.

Coliforms – Bacteria found in the intestinal tract of warm-blooded animals; used as indicators of fecal contamination in water.

Colloids – Very small, finely divided suspended solids that remain dispersed in a liquid for a long time due to their size and electrical charge.

Combined Sewer – A sewer designed to carry both sanitary wastewater and stormwater runoff to wastewater treatment plants.

Combined Sewer Overflow (CSO) – Excess amounts of wastewater and storm water that bypass treatment plants and flow directly into nearby waterways. CSOs generally occur during heavy rain or snowmelt.

Compost – An aerobic mixture of decaying organic matter, such as leaves and manure, used as fertilizer.

Decomposition – The biological breakdown of organic wastes.

Detention Time – The theoretical time required for a given flow of wastewater to pass through a tank.

Dewater – To remove or separate a portion of the water present in sludge. Dewatering reduces sludge volume making it easier to handle and store.

Diffuser – A device used to distribute the air stream from aeration tank's blower system into fine bubbles. Also used to distribute, mix and add chemicals, such as chlorine used for disinfection.

Digestion – The biological decomposition of organic matter in sludge by anaerobic or aerobic microorganisms. This process is performed in a digestion tank.

Disinfection – The final process in wastewater treatment designed to kill the majority of remaining microorganisms in the wastewater, including pathogenic (disease-causing) bacteria.

Dissolved Oxygen (DO) – The amount of molecular oxygen dissolved in water.

Effluent – Partially or completely treated wastewater flowing out of a basin, treatment process or treatment plant.

Estuary – Region of interaction between rivers and near-shore ocean waters, where tidal action and river flow mix fresh and salt water.

Floatables – Floating debris from litter in catch basins and waterways that is removed to prevent pollution and disruption of the water treatment process.

Flights – Continuously moving scrapers used to push and collect sludge or scum.

Flocculation – Clumping of bacteria and solids and other impurities which form clusters, or "floc". This action enhances solids settling in final tanks.

Grease Trap (Interceptor) – Devices that separate grease from wastewater to prevent grease discharge in sewers.

Greywater – Used water from clothes washing machines, showers, bathtubs, hand washing, and sinks.

Grit – The heavy inorganic material present in wastewater, such as sand, gravel and cinders.

Infiltration – The seepage of groundwater into a sewer system or sewer connections.

Influent – Wastewater flowing into a basin, treatment process or treatment plant.

Infrastructure – Facilities and systems which services are essential to sustain living conditions within a city.

Inorganic – Relating to material of mineral origin, such as salt, iron and calcium.

Methane – A major constituent of natural gas that can be used as a fuel. It is primarily produced within the anaerobic digestion process.

Microorganisms – Microscopic animals and plants of simple cell structure that feed on the wastes in wastewater. This feeding removes the organic pollutants in wastewater.

Mixed Liquor – The mixture of return activated sludge and primary effluent in the aeration tank.

Non-Point Source – Pollution that is not released through pipes but rather originates from multiple sources over a relatively large area.

Nutrients – Substances which are required to support living plants and animals. Major nutrients are carbon, hydrogen, oxygen, sulfur, nitrogen and phosphorus.

Organic – Relating to living organisms.

Outfall – The place where a sewer, drain, or stream discharges; the outlet or structure through which reclaimed water or treated effluent is finally discharged to a receiving water body.

pH – A measure of the relative acidity or alkalinity of water. Water with a pH of 7 is neutral; lower pH levels indicate increasing acidity, while pH levels higher than 7 indicate increasingly basic solutions.

Point Source – Any single source of pollutants including pipes and outfalls.

Pollution – The presence of matter or energy, whose nature, location, or quantity produces undesired environmental effects.

Potable Water – Water of a quality suitable for drinking.

Precipitation – Rain, snow, hail and sleet.

Preliminary Treatment – The removal of rocks, rags, sticks and similar materials which may hinder the operation of a treatment plant. Preliminary treatment is accomplished by using equipment such as bar screens and grit removal systems.

Primary Treatment – A wastewater treatment process using physical methods to remove most of the organic and inorganic solids in wastewater that settle or float.

Raw Sewage – Untreated wastewater.

Receiving Water – A stream, river, lake or ocean into which treated or untreated wastewater is discharged.

Renewable Resource – Natural resources whose supply can essentially never be exhausted, usually because it is continuously produced or replaced.

Return Activated Sludge – Bacterially active, settled organic solids which are returned to an aeration tank.

Runoff – That part of the precipitation, snow melt, or irrigation water that does not percolate into the ground resulting in uncontrolled surface streams and rivers.

Sanitary Sewer – A sewer intended to carry domestic wastewater from homes, businesses, schools, and other facilities.

Screenings – Material removed by the bar screens in preliminary treatment.

Scum – The layer or film of grease, fats, and floatables that rise to the surface in a sedimentation tank and is then scraped off and removed.

Secondary Treatment – A wastewater treatment process using enhanced, natural biological methods to convert dissolved or suspended materials into a form more readily separated from the water being treated.

Sediment – Usually applied to material in suspension in water or recently deposited from suspension. In the plural, the word is applied to all kinds of deposits from the waters of streams, lakes, or seas.

Septic System – A system designed to treat and dispose of domestic sewage.

Settling Tank – Where solids settle out of water by gravity during the wastewater treatment processes.

Sewage – The used water and solids from a community that flow to a treatment plant. The preferred term is “wastewater.”

Sewer – A channel or conduit that carries wastewater and stormwater from the source to a treatment plant or receiving stream.

Sewer Backups – Caused by clogged sewers this brings unsanitary wastewater back up into homes and onto streets.

Sludge – The accumulated, settled, organic solids which must be separated from the liquid portion of wastewater during the treatment process.

Sodium Hypochlorite – A solution used for disinfection similar in composition to, but stronger than, household bleach.

Stewardship – Taking personal responsibility to help protect your environment.

Storm Sewer – A separate sewer that carries runoff from storms, surface drainage, and street wash.

Stormwater – The portion of precipitation that does not naturally percolate into the ground or evaporate, but flows overland.

Suspended Solids – Solids that either float on the surface of, or are suspended in, wastewater.

Turbidity – The amount of cloudiness of a normally clear liquid due to the suspension of solid particles.

Wastewater – The used water and solids from a community that flow to a treatment plant.

Wastewater Treatment – Chemical, biological, and mechanical procedures applied to an industrial and municipal discharge contaminants.

Wastewater Treatment Plant – A facility that receives wastewater (and runoff) from domestic and industrial sources, and by a combination of physical, chemical, and biological processes reduces (treats) the wastewaters to less harmful byproducts.

Water (H₂O) – An odorless, tasteless, colorless liquid formed by a combination of hydrogen and oxygen; forms streams, lakes, and seas, and is a major constituent of all living matter.

Water Quality – The biological, chemical, and physical conditions of a waterbody; a measure of a waterbody’s ability to support beneficial uses.

Water Table – The top of the water surface in the saturated part of an aquifer.

Watershed – The land area that drains water to a particular stream, river, lake, or reservoir. It is a land feature that can be identified by tracing a line along the highest elevations between two areas, often a ridge.

Weir – An overflow structure from which flow exits a basin. It is typically in the form of a wall or channel.

For more information contact:

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Also visit DEP’s website at: www.nyc.gov/dep