



<b>Anaerobic</b>	In the absence of oxygen.
<b>Aerobic</b>	In the presence of oxygen.
<b>Alum</b>	An aluminum sulphate compound used to cause suspended particles in the water to congeal into filterable masses or to settle to the bottom of treatment units.
<b>Biosolids</b>	A nutrient-rich organic material resulting from the treatment of wastewater. Unprocessed wastewater treatment sludge must at least be digested before being referred to as biosolids. Biosolids contain nitrogen and phosphorus along with other supplementary nutrients in smaller doses, such as potassium, sulphur, magnesium, calcium, copper and zinc.
<b>Chlorination</b>	The application of chlorine to water, sewage or industrial wastes for disinfection (reduction of pathogens) or to oxidize undesirable compounds.
<b>Clarifier</b>	A tank or basin in which wastewater is held for a period of time, during which the heavier solids (referred to as sludge) settle to the bottom and any lighter materials present (referred to as scum) float to the water surface.
<b>Combined Sewers</b>	A sewer system in which the storm water and sanitary waste are combined. The system can be overwhelmed during severe storms, resulting in untreated waste being flushed into the receiving waters as a combined sewer overflow (CSO).
<b>Dewatered Cake</b>	Biosolids or residuals that have been dewatered to greater than 20 percent dry solids to produce a material of soil-like consistency.
<b>Dewatering</b>	A process used to remove water from biosolids or residuals producing dewatered cake that contains greater than 20 percent dry solids.
<b>Digester</b>	A tank in which solid material removed from wastewater (including raw and/or waste activated sludge) is placed to allow for decomposition by micro-organisms. Digestion may occur under anaerobic or aerobic conditions. Reduction in levels of pathogens and volatile solids is achieved.
<b>Dioxins</b>	A family of chlorinated organic compounds, of varying degrees of toxicity, that inadvertently result from certain chemical manufacturing processes, and from the incomplete combustion of organic compounds at high temperatures.



<b>Environmental Assessment</b>	A comprehensive and systematic process designed to identify, analyze and evaluate the environmental effects of proposed projects.
<b>Fertilizers</b>	Organic or inorganic products containing nutrients and applied to soil for the purpose of supporting plant growth.
<b>Floc</b>	Clumps of bacteria and particles that have come together to form clusters, or small gelatinous masses that are amenable to settling and/or filtration. Alum is used to aid the floc formation process.
<b>Fuel value</b>	A measure of the energy released during complete oxidation to carbon dioxide and water. Organic compounds vary in their fuel value.
<b>Incineration</b>	The combustion of the organic (carbon-containing) solids present in wastewater solids and biosolids to form carbon dioxide (a greenhouse gas) and water. The temperature in the combustion zone of furnaces is typically 760 °C to 870 °C. The solids that remain at the end of the process are an inert material commonly known as ash.
<b>Infiltration</b>	The seepage of groundwater into a sewer system, including service connections. Seepage frequently occurs through defective or cracked pipes, pipe joints, connections or manhole walls.
<b>Land application</b>	The beneficial use of biosolids based upon crop needs. The application of biosolids to land improves soil properties and plant productivity, and reduces dependence on inorganic fertilizers.
<b>Master Plan</b>	A comprehensive plan to guide long-term development in a particular area that is broad in scope. It focuses on the analysis of a system for the purpose of outlining a framework for use in future individual projects.
<b>Mesophilic bacteria</b>	A group of micro-organisms typically used in digestion that grow and thrive in a moderate temperature range between 68 F (20 °C) and 113 F (45 °C).
<b>Micronutrients</b>	An element required by plants and bacteria, in proportionately smaller amounts, for survival and growth. Micronutrients include Iron (Fe), Manganese (Mn), Zinc (Zn), Boron (B), and Molybdenum (Mo).
<b>Nutrient Management Act</b>	A nutrient management framework for Ontario's agricultural industry, municipalities and other generators of materials containing nutrients, including biosolids, that contains environmental protection standards.



<b>Nutrients</b>	Substances which are required to support living plants and organisms. Major nutrients include carbon, hydrogen, oxygen, sulphur, nitrogen, phosphorus and potassium.
<b>Organic compounds</b>	Carbon-containing compounds, either natural or synthetic in origin. Those of natural origin include plant and animal-based compounds such as fats, carbohydrates, proteins and fossil fuels. Those of synthetic origin include industrial chemicals produced from fossil fuels, such as polymers and plastics.
<b>Oxidation</b>	Chemical binding with oxygen. Biological oxidation is mediated by the activity of micro-organisms. Chemical oxidation occurs during combustion (i.e., incineration) of organic compounds, and when carried to completion, the combustion products are carbon dioxide and water. Organic compounds, including the volatile solids portion of biosolids, are amenable to chemical or biological oxidation.
<b>Pathogens</b>	Disease-causing organisms, including bacteria, viruses and parasites (protozoa and helminthic worms). Their numbers and types in wastewater, unprocessed sludge and biosolids depend on: the season of the year; sanitary habits, population density and rates of disease in the servicing area; and, the type and performance of wastewater and sludge treatment processes.
<b>Pelletization</b>	Biosolids that are stabilized using digestion, then completely dried and pressed into small pellets. The pellets are then used as fertilizer since they contain nutrients essential to plant growth, such as nitrogen.
<b>Preliminary treatment</b>	Part of the treatment process that removes large objects such rocks, rags, sand, tree branches and similar materials that may hinder the operation of a treatment plant. Preliminary treatment is accomplished by using equipment such as racks, bar screens and grit removal systems.
<b>Primary Treatment</b>	The physical removal of sand, grit, and larger solids from wastewater by settling tanks and/or skimming devices.
<b>Raw Sludge</b>	The solid materials collected from primary treatment.
<b>Residuals</b>	Solids produced from the treatment process used to produce drinking water and formed when suspended solids in the untreated water react with chemicals added during the treatment process to make the solids coagulate and settle out.
<b>Return Activated Sludge (RAS)</b>	That portion of the solid materials collected from secondary treatment that is returned to the aeration tanks to sustain biological activity there.



<b>Sanitary Sewer</b>	Sewer pipe that conveys wastewater to a wastewater treatment plant.
<b>Secondary Treatment</b>	Biological wastewater treatment process that occurs in two steps. First, micro-organisms are used to break down contaminants in wastewater that are organic in origin. This occurs in a series of aerated tanks. Second, micro-organisms and other solid materials are then settled out of the wastewater in secondary settling tanks.
<b>Storm Sewer</b>	A separate pipe that carries runoff from storms, surface drainage and street wash, but does not include domestic and industrial wastes.
<b>Stormwater</b>	Precipitation that accumulates in natural and/or constructed storage and stormwater systems during and immediately following a storm event.
<b>Surface runoff</b>	The portion of rainfall, irrigation water or wastewater that does not infiltrate into the soil.
<b>Thermophilic bacteria</b>	A group of micro-organisms that grow and thrive in temperatures above 113 F (45 °C), typically used in anaerobic digestion. The optimum temperature range for these bacteria in anaerobic decomposition is 120 F (49 °C) to 135 F (57 °C).
<b>Unprocessed sludge</b>	Raw sludge or WAS alone, or in combination, prior to any processing such as digestion.
<b>Volatile solids</b>	Organic compounds in solid form, present in wastewater, unprocessed sludge and biosolids, that are amenable to biological or chemical oxidation.
<b>Waste Activated Sludge (WAS)</b>	That portion of the solid materials collected from secondary treatment that is <i>not</i> returned to the aeration tanks.
<b>Wastewater</b>	The waste products of domestic, industrial, agricultural and manufacturing activities.
<b>Wastewater Treatment Plant</b>	A plant that treats urban wastewater and some of the runoff collected in the combined sewer system, and discharges the treated effluent to a receiving body of water.
<b>Water Treatment Plant</b>	A plant that treats raw water for use as potable (drinkable) water.
<b>Wet weather flow</b>	Water entering storm sewers during rainstorms/wet weather events.

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