

GLOSSARY OF TERMS

Aerobic	Processes that require excess oxygen to be present in the wastewater. Usually like to keep it at or above 2.0 mg/l.
Anaerobic	Processes that take place in the absence of oxygen. This is where the methane producers like to live.
Anoxic	Processes that require 0 to 0.2 mg/l DO. This gives the nitrification / denitrification cycle a chance to work.
Biosolids	The current term for dewatered, processed, disinfected, nutrient-rich material removed from the wastewater stream. Can be Class A (fancy – generally pasteurized) or Class B (must be applied where contact with humans is minimized).
BNR	Biological Nutrient Removal. Modification to the standard secondary process whereby nitrogen (and sometimes phosphorous) is removed from the wastewater biologically.
BOD₅	Biochemical Oxygen Demand – 5 day. Measure of how much organic, biodegradable material is in the wastewater. Measured in mg/l which is parts per million.
Clarifier	Round or rectangular tank where wastewater is allowed to slow down and allow the solids to settle out by gravity (aka sedimentation tank). Can be <i>primary</i> or <i>secondary</i> . Occasionally <i>intermediate</i> and even <i>tertiary</i> . Don't call it a pond.
DO	Dissolved Oxygen concentration in water. Measured in mg/l.
Effluent	The treated, clean water leaving the plant. Sometimes called “plant discharge.” Not outflow.
FOG	Fats, Oils, and Grease. Tough stuff to deal with but will be a future market for digesters looking for fuel.
Influent	The wastewater heading into the plant (don't say <i>inflow</i> or <i>feedwater</i>).
Liquid Stream	The path the wastewater follows as it moves through the facility.
MGD	Millions of gallons per day. Standard unit of measurement for plants.
MLSS	Mixed-Liquor Suspended Solids. Concentration of solids in secondary treatment tank. Measured in mg/l.
Outfall	The pipe and diffuser that extends into the receiving waters.
Primary Treatment	Typically, physical treatment only: screening, grit removal, and settling tanks.
Secondary Treatment	Process where conditions are made ripe for biological activity to break down and consume the organic load.

Septic	Situation where the DO has plummeted, and anaerobic fermentation has just started. H ₂ S off-gassing is the indicator for this.
Sludge	Material that has settled out from the wastewater as a clarifier. Named usually for where it came from or where it is headed: Primary Sludge Secondary Sludge Return Activated Sludge (RAS) Waste Activated Sludge (WAS) Thickened Sludge/Digested Sludge/Dewatered Sludge
Solids Stream	The path the solids removed from the wastewater follow as they move through the facility.
Tertiary Treatment	Usually refers to a polishing step following secondary treatment. Can be used for additional BOD/TSS removal, nutrient removal, or metals removal (rare). Usually a “canned” process.
TSS	Total Suspended Solids. It is what it says. Measured in mg/l. Includes organics and non-organic material.
Wastewater	It's one word (aka sewage).

NUMBERS TO KNOW

30/30	This was the standard set originally in the 1970s under the Clean Water Act. Effluent limits of 30 mg/l BOD, 30 mg/l TSS. We are now in the world of 20/10, 10/10, and even 5/5 for extremely sensitive receiving waters. If there is a third number (i.e., 10/10/5) it represents the nitrogen limit.
8.34	This is the weight of water per gallon. It is also the density of most organics (or nearly) and so makes a neat conversion factor: mg/l * mgd * 8.34 = lbs of “stuff” per day. <ul style="list-style-type: none"> • 250 mg/l TSS * 2.0 MGD * 8.34 = 4,170 lbs/day • This also works as a rough approximation for calculating oxygen demand, as that is what BOD is measuring. 5,000 lbs BOD/day means we need to apply 5,000 lbs of oxygen per day for the bugs to happily do their job.
100	Roughly the gallons of wastewater per day per person for an average community.