

SECTION 5

Glossary

Algae: Plants that grow in surface waters in relative proportion to the amount of light, nutrients, and attachment sites available. Algae are food for fish and other aquatic organisms.

Alkalinity: A measure primarily of the carbonate or carbon dioxide related compounds in water. The lower the alkalinity, the less capacity the water has to absorb acids without becoming more acidic.

Ammonium: A nitrogen-containing substance commonly excreted by animals and used by macroalgae for growth.

Anthropogenic: Caused by humans.

Benthos: The communities of aquatic life that dwell in or on the bottom sediments of a waterbody. The benthos may comprise the following: burrowing organisms such as clams, creeping animals such as snails, and sessile animals such as sponges.

Bioaccumulation: The enrichment of a chemical in an organism caused by either passive adsorption from seawater, active uptake, or ingestion, followed by retention in tissues or hard parts.

Bioaccumulative substance: Substances that increase in concentration in living organisms as they inhale or filter contaminated air or water or ingest contaminated food or water.

Biochemical Oxygen Demand (BOD): Refers to the amount of dissolved oxygen required to meet the metabolic needs of microorganisms in water, wastewater, and effluents.

Biosolids: The organic solids separated from raw wastewater or produced by the wastewater treatment process. Contain large amounts of organic matter.

cfu: Colony forming unit. A unit of measure used for describing the amount of bacteria contained in a given water volume.

Chlorophyll: Green pigments in plants, including algae, that play an important part in the chemical reactions of photosynthesis. A measurement of chlorophyll-*a*, one type of pigment, is commonly used as an indicator of the algae content of water.

Clean Water Act: Formerly known as the Federal Water Pollution Control Act.

Cleanup Screening Levels (CSL): CLSs are the criteria in the State sediment quality standards used to determine whether an area should be designated as a cleanup site.

Combined sewers: A sewer system that carries both sanitary sewage and stormwater runoff.

Combined sewer overflow (CSO): An overflow of combined wastewater and stormwater. CSOs occur when stormwater from heavy rains exceed the capacity of the wastewater collection system.

Detection limit: The lowest concentration level in a sample that can be determined to be statistically different from a blank sample.

Dissolved oxygen (DO): The oxygen that is freely available in water. Certain amounts are necessary for life processes of aquatic animals. The oxygen is supplied by the photosynthesis of plants and by aeration. Oxygen is consumed by animals, plants, and bacteria that decompose dead organic matter and some chemicals.

Effluent: Treated/untreated water or wastewater flowing out of a treatment facility, sewer, or industrial outfall. Generally refers to discharges into surface waters.

Enterococcus: Any *Streptococcus* bacteria that inhabit the intestines of warm-blooded animals. In the intestines, *Enterococci* are normal and do not cause disease. They can be pathogenic if they enter tissues, the bloodstream, or the urinary tract.

Estuary: A coastal area where fresh water mixes with salt water. It is usually in a semi-enclosed body with a source of fresh water, such as a river or stream. Estuaries provide shelter and food for marine organisms, birds, and other wildlife.

Euphotic zone: The layer of water that receives sufficient light to support photosynthesis.

Eutrophication: The progressive enrichment of confined bodies of water (such as an estuary) due to the addition of large amounts of inorganic nutrients. Excessive nutrient inputs allow large phytoplankton blooms, which use up oxygen in the underlying waters when they decompose. This deficit can kill nearby aquatic life.

Fecal coliform: Bacteria from the intestines of warm-blooded animals. Most fecal coliform bacteria are not harmful (pathogenic). They are measured or counted as an indicator of the possible presence of harmful bacteria.

Geometric mean: A calculated mean or average that is appropriate for data sets containing a few values that are very high relative to the other values. To reduce the bias introduced to an arithmetic mean (average) by these very high numbers, the natural logarithms of the data are averaged. The antilog of this average is the geometric mean.

Habitat: The physical and chemical environment that enables an aquatic organism to successfully complete its life cycle. The habitat includes food, shelter, and other factors, such as oxygen and physical characteristics.

Halocline: A layer of water which has a high rate of salinity change in the vertical dimension.

Influent: Water, wastewater, or other liquid flowing into a treatment facility.

Intertidal: The area of a beach that is exposed during low tide and covered during high tide.

Invertebrates: Animals lacking a backbone.

Macroalgae: Plants that float in the water or attach to larger plants, rocks, and other substrates. They are a normal component of aquatic ecosystems. Excessive numbers can make the water appear cloudy or colored.

Mean: Same as average. The sum of a list of values divided by the number of items on the list.

Median: The midpoint in a set of values that have been arranged in order.

Method detection limit (MDL): The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the concentration is greater than zero.

mgd: A unit of measure equal to million gallons per day.

mg/L: Milligrams per liter. Used in describing the amount of a substance in a given volume of liquid. Equal to parts per million (ppm).

µg/L: Micrograms per liter. Equal to parts per billion (ppb).

Monitor: The systematic and repeated measurement of conditions in order to track changes and assess the data gathered.

mpn: Most probable number. A unit of measure used for describing the amount of bacteria contained in a solid matrix, such as shellfish tissue.

National Pollutant Discharge Elimination System (NPDES): NPDES comes from Section 402 of the Clean Water Act. It prohibits the discharge of pollutants into navigable waters of the United States unless a special permit is issued by the EPA, a state, or tribal government.

Nearshore: Areas near the beach or shoreline influenced by light and wave action that may or may not be exposed at low tide.

Nitrate, nitrite: Two forms of nitrogen compounds that algae may use for growth. High concentrations may lead to algal blooms and undesirable effects.

Nonpoint source: An input of pollutants into a water body from unidentifiable sources, such as agriculture, the atmosphere, stormwater or groundwater runoff.

Nutrient: An inorganic or organic compound essential for growth of organisms.

Organic: Refers to living organisms and to the chemistry of compounds containing carbon.

Outfall: Discrete location where quantities of water and/or waste are discharged into lakes, streams, or oceans, generally through a pipe.

Pathogen: A microorganism that can cause disease in other microorganisms, humans, animals, or plants. Pathogens can be present in point and nonpoint source discharges.

Parameter: One of a set of properties whose values determine the characteristics of a waterbody. Examples include dissolved oxygen, temperature, and salinity.

Phytoplankton: Free-floating, single-celled, microscopic plants that live in water (also called unicellular algae).

Plankton: Organisms that drift passively or are weak swimmers, mostly phytoplankton, protozoa, larval animals, and small filter-feeding zooplankton. Are generally found in the surface layers of a waterbody.

Point source: An input of pollutants into a waterbody from discrete sources, such as municipal or industrial outfalls.

Polychaeta: A class of annelid worms that includes most of the marine segmented worms.

Primary treatment: The first stage of wastewater treatment involving removal of debris and solids by screening and settling.

Pycnocline: A layer of water which has a high rate of density change in the vertical dimension.

Raw sewage: Untreated wastewater.

Reported detection limit (RDL): The level below which the laboratory does not report numerical values.

Salinity: A measure of the amount of dissolved solids in seawater. It is usually calculated from conductivity, refractive index, or chlorinity.

Secchi disk: A black and white painted disk that is used to measure the clarity of water. The disk is lowered into the water until it is not visible. The Secchi disk reading is half the distance between that depth and the depth at which the disk can be seen again.

Secondary treatment: The stage following primary treatment and which bacteria are used to consume organic wastes. Wastewater is then disinfected and discharged through an outfall.

Sediment Quality Standards (SQS): Standards established by the Washington State Department of Ecology for selected organic compounds and metals in sediments (Chapter 173-204 WAC). These standards are derived from the Puget Sound Apparent Effects Thresholds for selected chemicals.

Sill: A submarine ridge partially separating bodies of water, such as fjords, from one another or from the open ocean.

Standard: An established limit for a substance in water or sediment or a physical property of the water or sediment.

Subtidal sediments: Sediments below the lowest reach of the low tide.

Thermocline: A layer of water in which a rapid change in temperature can be measured in the vertical dimension.

Total suspended solids (TSS): Particles, both mineral (clay and sand) and organic (macroalgae and small pieces of decomposed plant and animal material), that are suspended in water.

Transparency: A measure of water clarity, often measured by using a Secchi disk.

Turbidity: Lack of water clarity caused by suspension of minute particles, usually algae, silt, clay, or dissolved materials.

Upwelling: The process by which deep, cold, nutrient-laden water is brought to the surface, usually by wind divergence of equatorial currents or coastal winds which push water away from the coast.

Washington Administrative Code (WAC): The regulations adopted by various Washington State agencies through the rule-making process.

Wastewater: Flow of liquids and solids within a sewerage system.

Water column: The area of water contained between the surface and the bottom of a waterbody.

Zooplankton: Small animals that drift passively or weakly swim in the water.