Curriculum Project Glossary DRAFT
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above-ground system: an OWTS in which the infiltrative surface of the final treatment and dispersal component is above original grade.

absorption: the process by which one substance is physically taken into and included with another substance.

absorption area: the area of original soil that is designed to accept effluent.

absorption surface: *see* **absorption area**

acceptance: infiltration of effluent into the designated media

activated carbon filter: a porous form of carbon that acts as an absorbent; used to decolorize liquids, recover solvents, and remove toxins and odors from water and air.

activated sludge process: a biological wastewater treatment process in which biologically active sludge is agitated and aerated with incoming wastewater and subsequently separated from the treated wastewater (mixed liquor) by clarification; most of the sludge is returned to the process and the remainder is wasted as needed.

additive: any product added to a sewage treatment system with the intent to improve performance.

adsorption: the adhesion of molecules to the surface of solid bodies or liquids with which they are in contact.

aeration chamber: a chamber (or tank) in which wastewater is brought into contact with air for the purposes of facilitating biological degradation such as in (but not limited to) the activated sludge process.

aeration system: the piping, diffusers, air source, vents, and all other necessary components for an activated sludge process.

aerobic: having molecular oxygen as a part of the environment, or growing or occurring only in the presence of molecular oxygen.

aerobic treatment: the digestion of organic matter and settleable solids in an oxygenated environment to produce a clarified liquid.

aerobic treatment unit: a saturated pretreatment component that provides for aerobic degradation or decomposition of wastewater constituents by bringing the wastewater into direct contact with air (oxygen) by some mechanical means.

aggregate: a clean graded hard rock, volcanic rock, or gravel of uniform size, 3/4 inch to 2 1/2 inches in diameter, offering 30% or more void space, washed or prepared to be free of fine materials that will impair absorption area performance, and has a hardness value of three or greater on the Moh's Scale of Hardness (can scratch a copper penny).

air: colorless, odorless, tasteless gaseous mixture of nitrogen (78%) and oxygen (21%) and other gases in trace amounts.

air diffuser: device that injects air under pressure into wastewater through diffusion plates or other suitable devices.

air line: the piping conveying air from the air source to the point of diffusion.

air relief: a device installed in a system to facilitate air release during pressurization.

air source: the component used to supply air to an aerobic treatment unit.

alarm: a device that clearly alerts the system operator of malfunction by use of visual and/or audible methods that can be either on site or remotely located.

alluvial: pertaining to processes or materials associated with transportation or deposition by running water.

alluvial soil: (i) a soil developing from recently deposited alluvium and exhibiting essentially no horizon development or modification of the recently deposited materials. (ii) when capitalized, the term refers to a great soil group of the azonal order consisting of soils with little or no modification of the recent sediment in which they are forming.

alternative onsite wastewater treatment system: an onsite treatment system that includes components different from those used in a conventional septic tank and drainfield system.

alternating fields: a final treatment and dispersal component design that includes two drainfields that are dosed one at a time, usually for a six-month period.

alternating valve: *see* **valve, alternating.**

ammonium (NH_4^+): *see* **nitrogen, ammonium.**

anaerobic: the absence of molecular oxygen as a part of the environment. *see* also aerobic

anoxic process: the process by which nitrate nitrogen (NO_3^-) is converted biologically to nitrogen gas (N_2) in the absence of oxygen.

aquic conditions: continuous or periodic saturation and reduction, indicated by redoximorphic features and verified by measuring saturation and reduction of the soil.

aquifer: a geologic formation that is saturated and sufficiently permeable to transmit economic quantities of water to wells and springs.

as-built drawings: the original plans and specifications prepared for construction and approved by the regulatory authority, corrected to reflect how a facility was actually constructed or installed.

aspirator: a feeder tube using a hydraulic device that creates suction. the suction draws the material to be fed into the flow of the water.

attached growth process: biological treatment process in which the microorganisms responsible for the treatment are attached to a fixed medium.

attached growth media filter: a pretreatment unit that contains media to which microorganisms attach themselves

attached growth unit: *see* **attached growth media filter.**

at-grade system: an OWTS in which in which the infiltrative surface of the final treatment and dispersal component is at or close to original grade

backfill: the material placed in an excavation after construction or repair.

backflow: *see* **backsiphonage**

backflush: to reverse the direction of flow through a filter, ion exchange column, or membrane to remove particles for cleaning purposes.

bacteria, thermophilic: microorganisms which grow best at temperatures between 20 and 70 degrees C, the optimum temperature for growth being 50 degrees C.

backsiphonage: reversal of flow (backflow) due to a reduction in system pressure that causes a negative or subatmospheric pressure to exist at a location in an OWTS.

backwash: *see* **backflush.**

baffle: a device placed in a wastewater treatment system component to reduce velocity, dissipate energy, direct flow, retain solids, and/or draw water off at a specific depth.

baffle, flow restrictor: baffle designed to maximize plug flow.

baffle, gas deflector: a baffle designed to direct gases and rising solids away from the bottom of the outlet.

baffle, inlet: a baffle on the inlet side of a septic tank.

baffle, outlet: a baffle on the outlet end of a septic tank.

ball valve: *see* **valve, ball.**

basal area: total finished area of an aboveground system including the absorption area and any necessary landscaping.

batch flow: a treatment configuration in which flow is neither entering nor leaving the treatment device and the liquid contents are mixed completely.

bedding: (i) the process of laying a pipe or other conduit in a trench with the bottom shaped to the contour of the conduit or tamping earth around the conduit to form its bed. (ii) material placed under a pipe or unit for mechanical support.

bed system: an OWTS in which the final treatment and dispersal component consists of a seepage bed.

bed, seepage: an excavated area greater than three feet but no more than 25 feet in width that contains drainfield rock and has more than one distribution pipe.

bedrock: a general term for the solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

biochemical oxygen demand (BOD_5): *see* five-day biochemical oxygen demand

biological loading rate: the amount of BOD_5 delivered to a treatment unit expressed as

biomat: the layer of biological growth and inorganic residue that develops at the wastewater-soil interface and extends about 1 inch into the soil matrix; the biomat controls the rate at which effluent moves through the infiltrative surface for coarse- to medium-textured soils, but may not control fluxes through fine clay soils, which are more restrictive to wastewater flows than the biomat.

biosolids: primarily organic solid product produced by the wastewater treatment process that can be beneficially recycled.

blackwater: that portion of the wastewater stream that originates from toilets and kitchen sinks.

bleed: to drain a liquid or gas, as in bleeding accumulated air from a water line or draining a trap of accumulated water.

blower: an air source using a fan for delivery.

boot: a flexible device attached to rigid piping to provide a watertight seal.

bubble, coarse: a bubble of 3 to 8 mm diameter generated by an air diffuser

bubble, fine: a bubble of 0.2 to 3 mm diameter generated by an air diffuser

bubble, micro: a bubble of less than 0.2 mm diameter generated by an air diffuser

building sewer: the drain pipe that begins outside the building wall and conveys wastewater to the first OWTS component.

bull-run valve: *see* **valve, bull-run**.

buoyancy valve: *see* **valve, buoyancy**.

bury depth: the depth from finished grade to the top of a system component.

cesspool: a lined or partially lined underground pit into which raw household wastewater is discharged and from which the liquid seeps into the surrounding soil.

chain trencher: an excavator that uses a chain with cutters attached to cut, remove, and deposit spoil to the side of the trench or onto a discharge conveyor.

chamber: a preformed, open-bottom dispersal device used in a system to create an enclosed open space with the soil interface acting as a surface for the infiltration of effluent.

check valve: *see* **valve, check.**

chemical oxygen demand (COD): a standard test that measures the amount of the organic matter in wastewater that can be oxidized by a very strong chemical oxidant, typically dichromic acid.

chemical treatment: any treatment process involving the addition of chemicals to obtain a desired result, such as precipitation, coagulation, flocculation, sludge conditioning, or disinfection.

chisel plow: *see* **plow, chisel.**

chlorination: the process of disinfection using chlorine.

chlorine: a gaseous chemical element used as a disinfectant and oxidizing agent.

chlorine residual: the total amount of chlorine remaining in water, sewage, or industrial wastes at the end of a specified contact period following chlorination.

chroma: the relative purity, strength, or saturation of a color; directly related to the dominance of the determining wavelength of the light and inversely related to grayness; one of the three variables of color. *see* also Munsell Color System, hue, and value.

clarification: any process or combination of processes that uses separation (settling or floatation) to reduce the amount of suspended matter in wastewater.

clay: (i) a soil separate consisting of particles <0.002 mm in equivalent diameter. (ii) a textural class. *see* also soil texture. (iii) (in reference to clay mineralogy) a naturally occurring material composed primarily of fine-grained minerals, which is generally plastic at appropriate water contents and will harden when dried or fired.

cleanout: any structure or device that is designed to provide access for the purpose of removing deposited or accumulated materials.

clear water: potential component of the wastewater stream including surface or groundwater as well as process water (e.g., reverse osmosis, etc.) the addition of which may result in excessive hydraulic loading.

clear zone: the area within an operating septic tank that contains effluent that, although not highly treated, is greatly clarified relative to the wastewater entering the tank since the larger particles have migrated down as settled solids (sludge) or floated up as scum.

cluster system: a sewage collection, treatment, and dispersal system designed to serve two or more sewage-generating units.

coliform: one type of bacteria, the presence of which is an indication of possible pathogenic bacterial contamination: fecal coliforms are those coliforms found in the feces of warm-blooded animals while total coliforms also have other environmental sources.

coliphage: a bacterial virus, also known as a bacteriophage, which uses Escherichia coli (E. coli) as its host cell.

commercial kitchen: a food preparation center that generates multiple meals or food products and has the potential for generating high-strength wastewater.

compartment: a physical partitioning of a treatment process or structure.

composting toilet: a self-contained facility constructed to decompose human wastes through bacterial action.

compressor: a device used to deliver air to an OWTS component at a relatively high pressure.

conductivity, hydraulic: *see* **hydraulic conductivity.**

connectors: devices used to attach one piece of tubing to another.

consistence: *see* **soil consistence**.

constructed wetland system (CWS): an OWTS that incorporates an aquatic treatment system consisting of one or more lined basins which may be filled with a medium and where wastewater undergoes some combination of physical, chemical, and/or biological treatment and evapotranspiration.

contact time: the time in which a chemical or constituent is in contact with another reacting chemical or constituent.

continuous path: a type of final treatment and dispersal system using serial distribution by gravity flow that progressively loads the system.

control: a device that regulates the operation of a piece of equipment.

control, redundant off: a second control used as a backup device to assure that a pump turns off.

cover: soil placed over the OWTS components for landscaping.

cross-over pipe: *see* **stepdown.**

curtain drain: *see* interceptor drain.

d-box: *see* **distribution box**.

daily flow rate: actual flow generated from a facility in a 24-hour period.

decentralized wastewater treatment: the collection, treatment, and dispersal/reuse of wastewater from individual homes, clusters or homes, isolated communities, industries, or institutional facilities, as well as existing communities at or near the point of waste generation.

demand: control of an OWTS based on use.

denitrification: the biochemical reduction of nitrate (NO_3^{-}) or nitrite (NO_2^{-}) to gaseous molecular nitrogen (N_2) or an oxide of nitrogen.

depressurized flow: see **flow, depressurized**.

design: the act of selecting, sizing, locating and configuring the onsite wastewater treatment system component to match the facility and site characteristics.

design flow: a predicted wastewater quantity for a facility used to size the component of the wastewater treatment system.

detention time: the average length of time a drop of water or a suspended particle remains in a tank or chamber; mathematically, it is the volume of water in the tank divided by the flow rate through the tank.

dewater: to partially remove water. this may refer to the removal of water from a basin, tank, reservoir, or other storage unit, or to the separation of water from solid material.

diffuser: *see* **air diffuser**.

disinfection: the process of destroying pathogenic organisms in wastewater.

disk filters: a filter used in drip distribution systems consisting of concentrically grooved disks, stacked one upon the other to create a series of specific size openings for removal of a specific size of particle.

dispersal: spreading of effluent over and/or into the final receiving environment.

dissolved oxygen (DO): the oxygen dissolved in water, wastewater, or other liquid, usually expressed in milligrams per liter (mg/l), parts per million (ppm), or percent of saturation.

distribution box (D-box): a level, watertight structure that receives septic tank effluent and distributes it in theoretically equal portions to dispersal lines.

distribution media: *see* **media, distribution.**

distribution system: a series of components used to convey effluent from a pretreatment component to an infiltrative surface.

distribution lateral: *see* **lateral.**

distribution uniformity: a measure of the efficiency of distribution of effluent over the dispersal area.

diversion valve: *see* **valve, alternating.**

domestic wastewater: *see* **wastewater, domestic.**

dose: *see* **dosing event.**

dose cycle: *see* **dosing event.**

dose volume: the amount of effluent delivered to the distribution system during a dosing event including the drainback volume and the effluent delivered to the distribution lateral.

dosed-flow distribution: a method of applying effluent wherein predetermined volumes of effluent are held in a chamber and dosed out to the pretreatment or dispersal component.

dosing chamber: *see* **pump tank**.

dosing device: a pump, siphon, or other device that discharges a specific amount of effluent to the distribution system.

dosing event: a single on/off cycle of a dosing device.

Down gradient: the direction water flows.

drain valve: *see* **valve, drain.**

drainage: any natural or artificial groundwater or surface water drainage system including agricultural drain tile, cut banks, and ditches which intercept and divert groundwater or surface water from the area of the OWTS.

drainage system: a network of subsurface drainage an surface features used to collect and transport surface and groundwater away from the site.

drainback volume: the amount of effluent that fills the supply line.

drainfield: a final treatment and dispersal component that usually is designed to include soil treatment of effluent.

drawdown: the drop in the water level of a tank over a specific period of time.

drip distribution system: a distribution system that incorporates drip technology.

drip emitter: *see* **emitter.**

drip field: the area where one or more drip zones are located in a drip distribution system.

drip lateral: length of drip line extending from the supply manifold to the return manifold.

drip line: polyethylene tubing with drip emitters uniformly spaced along its length.

drip zone: a component of a drip distribution system made up of a group of drip laterals that are managed as a single unit

dripper loading: the amount of effluent discharged at each drip emitter during a dosing event.

drop box: a device used for the serial distribution of effluent by gravity flow to a final treatment and dispersal component.

drywell: a lined or partially lined underground pit into which effluent is discharged and from which the liquid *see*ps into the surrounding soil.

dual fields: *see* **alternating fields.**

duplex system: a control that operates two devices in an OWTS.

dwelling: a structure or building, or any portion thereof which is used, intended or designed to be occupied for human living purposes including, but not limited to: houses, houseboats, boathouses, mobile homes, travel trailers, hotels, motels, and apartments.

ET bed: *see* **evapotranspiration bed**.

ETA bed: a dispersal component using evaporation, transpiration and absorption for dispersal of effluent.

ETI bed: *see* **ETA bed.**

effective size: the size of screen opening (particle diameter) where 90 percent by weight of a filter media sample is retained on the screen and 10 percent passes through the screen

effluent: liquid flowing out of an OWTS component.

effluent filter: *see* **effluent screen.**

effluent screen: a device designed to trap solids that is removable, cleanable and installed on the outlet piping of a septic tank.

effluent quality: the physical, biological, and chemical characteristics of a liquid flowing from a system component.

elapsed time meter: *see* **meter, elapsed time.**

emitter: a drip distribution system component that dispenses effluent to the soil interface at a predictable rate, measured in gallons (liters) per hour.

emitter, non-pressure compensating (Non-PC): an emitter that discharges effluent at rates dependent upon operating pressure.

emitter, pressure compensating (PC): an emitter designed to deliver effluent at a consistent flow rate under a range of operating pressures.

environmental sensitivity: the relative susceptibility of a ground or surface water resource to adverse impacts.

evapotranspiration bed (et bed): a dispersal component designed to totally remove the liquid portion of a wastewater stream by direct evaporation and by transpiration.

fecal coliform: indicator bacteria common to the digestive systems of warm-blooded animal that is cultured in standard tests to indicate either contamination from sewage or the level of disinfection, generally measured as colonies/100 ml.

field flush: the act of opening the flush valve and allowing the effluent to scour the conduit and transport accumulated materials.

field pressure: see **operating pressure.**

filter: any device in an OWTS that removes suspended solids and/or reduces BOD when effluent is passed through it.

filter, in-line: a device located within the piping of an OWTS, operated under pressure and designed to remove suspended solids from wastewater.

filtration: the removal of suspended materials in effluent by passing effluent through an unsaturated filter medium.

final treatment and dispersal: the last component of an OWTS.

five-day biochemical oxygen demand (BOD_5): a commonly used gross measurement of the concentration of biodegradable organic impurities in wastewater, determined by measuring the amount of oxygen required by bacteria while stabilizing, digesting or treating organic matter under aerobic conditions over a five-day incubation period and commonly expressed in milligrams per liter (mg/l).

fixed film: see **attached growth process.**

fixture unit: a measure of the probable discharge into the system by various types of plumbing fixtures used in the determination of design flow.

float tree: a removable device located within a pump vault or pump tank from which control floats are suspended.

floatable: a solid with a density less than that of water

float: a device, suspended within a pump vault or tank which (in response to changing liquid levels) opens or closes an electrical circuit, thereby activating, deactivating or alternating equipment operation.

flow, depressurized: the portion of a dosing event during which the distribution system is draining.

flow, pressurized: the portion of a dosing event during which the distribution system is full and thus at operating pressure.

flow, pressurizing: the portion of a dosing event during which the distribution system is being filled and thus not yet at operating pressure.

flow equalization: the use of storage to average a varying flow and allow for uniform doses of effluent over time.

flow measurement: any method used to accurately measure the flow of liquid.

flow splitter: a device used to divide effluent to direct flow to multiple components.

flush: allowing effluent to scour a component and transport accumulated materials.

flush valve: *see* **valve, flush.**

fog (fats, oils, grease): a component of sewage typically originating from food stuffs (animal fats or vegetable oils) or consisting of compounds of alcohol or glycerol with fatty acids (soaps and lotions) typically measured in mg/l.

footprint: the area and geometry of OWTS.

force main: *see* **pressurized main.**

freeboard: the height required to maintain separation from the normal effluent surface to the top of the berm of a lagoon.

french drain: *see* **interceptor drain.**

friction loss: the pressure head lost by effluent flowing in a pipe as a result of the disturbances set up by contact between moving effluent and the pipe wall.

gas deflector baffle: see baffle, gas deflector.

gate valve: *see* **valve, gate.**

grassed waterway: natural or constructed watercourse or outlet that is shaped or graded and established in suitable vegetation for the disposal of runoff water without erosion.

gravel: rounded or subrounded coarse rock fragment that is between 0.1 inches (two millimeters) and three inches (76 millimeters) in diameter.

gravelless pipe: a distribution medium consisting of perforated, corrugated pipe encased in a geotextile wrap.

gravimetric: of or pertaining to measurement by weight.

gravity-flow distribution: a method of applying effluent flowing by gravity from the outlet of one component to the next.

greywater: sewage that does not contain toilet or kitchen drain wastes.

grease interceptor: a watertight device designed to intercept and retain or remove grease and/or fatty substances.
grease tank: *see* **grease interceptor.**

grease trap: *see* **grease interceptor.**

grinder pump: a mechanical device that shreds solids and raises sewage to a higher elevation.

groundwater: that portion of the water below the surface of the ground at a pressure equal to or greater than atmospheric. *see* also water table.

groundwater interceptor: see interceptor drain.

groundwater mounding: a mound-shaped elevation in a water table or other potentiometric surface that builds up as a result of the downward percolation of liquid through an unsaturated zone or an overlying confining bed into the aquifer represented by the potentiometric surface.

head: the energy per unit weight of a liquid. in practical terms, head is the pressure at any given point in a system, typically measured in psi or feet.

header pipe: *see* **manifold.**

holding tank: a watertight receptacle for the collection and holding of wastewater.

holding tank sewage system: an on-site sewage system which incorporates a holding tank, the services of a sewage pumper/hauler, and the off-site treatment for the sewage generated.

hue: a measure of the chromatic composition of light that reaches the eye; one of the three variables of color. *see* also Munsell Color System, chroma, and value, color.

hydraulic conductivity: the proportionality factor in Darcy's law as applied to the viscous flow of water in soil, i.e., the flux of water per unit gradient of hydraulic potential. if conditions require that the viscosity of the fluid be divorced from the conductivity of the medium, it is convenient to define the permeability of the soil as the conductivity divided by the fluidity of the fluid.

hydraulic loading rate: the amount of water applied to a given treatment step, usually expressed as volume per unit surface area or volume per unit time, e.g., gallons per day per square foot (gpd/sq. ft.).

impermeable: *see* **impervious.**

impervious: resistant to penetration by fluids or by roots.

indicator organism: an organism who's characteristics show the presence of specific environmental conditions.

industrial wastewater: *see* **wastewater, industrial.**

infiltrative surface: any area through which effluent must be accepted.

influent: wastewater entering an OWTS component.

influent quality: the physical, biological and chemical characteristics of the liquid flowing to a system component.

in ground system: an OWTS in which the majority of the infiltrative surface of the final treatment and dispersal component is below original grade.

injection well: a well in which effluent is transmitted to a subterranean formation.

inlet baffle: *see* **baffle, inlet.**

in-line filter: *see* **in-line filter**.

inorganic: the minerals, salts, etc. present in wastewater not attributed to carbon molecules.

inspection: activities to determine the functional status of an OWTS.

inspection port: an access point in an OWTS process or component.

installation: the complete assembly of all components of an OWTS including final site grading and establishment of vegetative cover.

instantaneous flow rate: the amount of effluent that can be applied to the infiltrative surface in a given unit of time.

interceptor drain: a subsurface drain used to intercept laterally moving groundwater

invert: the lowest portion of the internal cross-section of a pipe or fitting.

Kjeldahl nitrogen: *see* **nitrogen, Kjeldahl.**

lagoon: a system incorporating a pretreatment component and a large holding or detention pond, usually with earthen dikes, used to contain effluent.

land application: *see* **final treatment and dispersal**.

landscape loading rate: *see* **linear loading rate.**

lateral: a perforated pipe used to carry and distribute effluent throughout the dispersal area in an LPP/LPD or drip dispersal system..

lateral volume: the volume of effluent needed to fill the lateral piping.

leach field: *see* **in-ground system.**

leaching pit: see seepage pit.

lifecycle cost: the total cost of an OWTS over the design period (typically 20 to 30 years) including capital costs and ongoing operation and maintenance costs.

lift station: *see* **pump station.**

limiting layer: a horizon or condition in the soil profile or underlying strata that limits treatment and dispersal capacity.

line spacing: the horizontal distance between laterals or drip line.

linear loading rate: the cumulative quantity of effluent applied on the contour of the landscape, typically expressed in gallons per foot.

liquid capacity: the liquid volume of a septic tank below the invert of the outlet pipe, or, for holding tanks and pump tanks, the liquid volume below the invert of the inlet.

long-term acceptance rate (LTAR): the stable rate of effluent acceptance through the infiltrative surface of a final treatment and dispersal component measured in gallons per day per square foot (gpd/sq. ft.).

low pressure pipe/low pressure distribution (LPP/LPD): an OWTS in which pressurized small diameter distribution lines are used for equal distribution of effluent within the final treatment and dispersal component.

maintenance: all activities required to assure the effective and continuous operation and performance of an OWTS.

management entity: an entity similar to a responsible management entity, but managing a limited set of management activities (e.g., homeowners' association, contracted provider of management services). see also responsible management entity.

management services: planning, design, permitting, inspection, construction/installation, operation, maintenance, monitoring, enforcement, and other services required to ensure that the wastewater treatment performance requirements established by the regulatory authority are achieved. management services should be provided by properly trained personnel and tracked by means of a comprehensive management information system.

manhole: an opening, often with a cover, through which a person can enter a sewer for repair work or inspection.

manifold: a pipe with several branches or fittings to allow effluent to be discharged at two or more points.

mastic: material used to create a watertight seal

mechanical aeration: the process of introducing air into effluent by the mechanical action of paddle, paddle wheel, spray or turbine mechanism.

media, distribution: the material used to distribute effluent within a final treatment and dispersal component.

media, treatment: a selected group of materials used in filters and filter devices to form barriers to the passage of certain solids or molecules that are suspended or dissolved in effluent.

media filter: a device that uses unsaturated material to treat effluent to a desired quality by removing suspended solids and/or reducing BOD.

media filter system: an OWTS that uses a filter as part of the treatment train.

meter, dose or event: a device used to record how many times a component has been in operation phase.

meter, elapsed time: a device used to record the length of time a component has been in the operation phase

minimum dose volume: a design parameter for LPP/LPD systems considered to be four times the volume of the laterals

mixed liquor: a mixture of aerobic bacteria and wastewater undergoing treatment in an aeration chamber.

monitoring: routine observation, sampling, and testing of designated locations or parameters to determine the efficiency of treatment or compliance with standards or requirements.

most probable number (MPN): an estimate of the density of microorganisms in a sample based on certain statistical formulas commonly used to estimate the density of coliform bacteria in a water sample.

mound: an above ground system that incorporates at least 12 inches of clean sand above the original soil surface.

mound, modified: an aboveground system with less than 12 inches of clean sand above the original soil surface.

Munsell Color System: a color designation system that specifies the relative degrees of the three simple variables of color: hue, value, and chroma. for example: 10yr 6/4 is a color (of soil) with a hue = 10yr, value = 6, and chroma = 4. *see* also **chroma**, **hue**, **value**, **color**.

nitrate (NO_3^-): *see* nitrogen, nitrate (NO_3).

nitrification: biological oxidation of ammonium to nitrite and nitrate, or a biologically induced increase in the oxidation state of nitrogen.

nitrogen (n): a gaseous element molecular formula (N_2) that constitutes 78 percent of the atmosphere by volume and occurs as a constituent of all living tissues in combined form. nitrogen is present in surface water and groundwater in the forms of ammonia (NH_3), nitrite (NO_2^-), nitrate (NO_3^-) and organic nitrogen. *see also* ammonia; nitrate; nitrite; organic nitrogen.

nitrogen, ammonia (NH_3):

nitrogen, ammonium (NH_4^+): a reduced form of nitrogen usable by plants.

nitrogen, Kjeldahl: the combination of ammonia nitrogen (NH_3) and organic nitrogen in a wastewater sample: total Kjeldahl nitrogen is operationally defined by a method that involves digestion of a sample followed by distillation and determination of ammonia (NH_3) in the distillate; *see also* nitrogen, total Kjeldahl (TKN).

nitrogen, nitrate (NO_3): an oxidized ion of nitrogen; nitrifying bacteria can convert nitrite (NO_2^-) to nitrate in the nitrogen cycle.

nitrogen, total: a measure of the complete nitrogen content in wastewater. the forms of nitrogen of greatest interest are nitrate (NO_3^-), nitrite (NO_2^-) ammonia (NH_3) and organic nitrogen; all these forms of nitrogen, as well as nitrogen gas (N_2), are biochemically interconvertible and are components of the nitrogen cycle; the total nitrogen content of wastewater can be determined by measuring nitrate, nitrite, ammonia and Kjeldahl nitrogen.

nitrogen, total Kjeldahl (TKN): the total concentration of organic nitrogen and ammonia nitrogen, i.e., nitrogen with a valence of -3 (n^{3-}); the amount of organic nitrogen can be obtained by separately measuring the ammonia nitrogen and subtracting that value from the total Kjeldahl nitrogen.

nondomestic wastewater: *see* wastewater, non-domestic.

non-potable: water that is unsafe to drink because it contains pollution, contamination, minerals, or infective agents.

nutrient: elements or compounds essential as raw materials for organism growth and development.

o-ring: a round, circular, rubber-material gasket shaped like the letter "o" that is used to seal around round objects, such as the ends of two pipes.

onsite wastewater treatment system (OWTS): a system relying on natural processes and/or mechanical components that is used to collect, treat and disperse wastewater from single dwellings or other buildings or structures.

operating pressure: the manufacturer's or designer's specified range of pressure, expressed in pounds per square inch (psi), pascals (Pa), or kilopascals (kPa), within which a device or system is designed to function; also known as 'field pressure'.

organic matter: material substances derived from living organisms (plants or animals).

organic nitrogen: nitrogen in organic material.

organic loading rate: *see* **biological loading rate**

organic phosphorus: *see* **phosphorus, organic**

orifice: discharge hole in a distribution system.

orifice shield: a device used to protect an orifice from external blockage.

outlet baffle: *see* **baffle, outlet**

oxygen transfer ratio: a ratio used for comparing aeration systems consisting of the amount of oxygen absorbed by a liquid compared to the amount fed into the liquid through an aeration or oxygenation device, usually expressed as a percentage.

ozone: an unstable form of oxygen (O_3) used as an oxidizing, deodorizing or bleaching agent.

ozonation: application of ozone to wastewater for disinfection.

package plant: term commonly used to describe an aerobic treatment unit serving multiple dwellings or an educational, health care, or other large facility.

packed bed filter: a type of media filter in which a medium is present with sufficient surface area to promote the removal of contaminants.

parallel distribution: distribution of effluent by gravity flow that equally loads all section of a final treatment and dispersal component at one time.

particle size distribution: the fractions of the various soil separates in a soil sample, often expressed as mass percentages.

pathogens: organisms that cause disease; examples in wastewater include salmonella, vibrio cholera, and entamoeba histolytica.

pathogenic: causing disease; commonly applied to organisms that cause infectious diseases.

peat: organic soil material in which the original plant parts are recognizable (fibric material).

perched water: zone of unpressurized water held above the main groundwater body by impermeable rock or sediment.

performance standards: any requirement established by the regulatory authority to ensure compliance with the public health and environmental goals of the community.

permeability: the ability of a porous medium such as soil to transmit fluids or gases.

permit: an authorization, license, or equivalent control document issued by the appropriate regulatory authority to implement the requirements of an environmental regulation.

penetration: any location in a watertight container through which a pipe or conduit is conveyed.

piezometer: an instrument for measuring pressure head in a conduit, tank or soil by determining the location of the free water surface.

ph: a measure of the acid or base quality of water that is the negative log of the hydrogen ion concentration. the scale ranges from 1-14. a ph of 7.0 is neutral with 13.0 being very basic and 1.0 being very acidic.

phosphorus (P): an essential chemical element and nutrient for all life forms, occurring as orthophosphate, pyrophosphate, tripolyphospate and organic phosphate forms; each of these forms, as well as their sum (total phosphorus), is expressed in terms of milligrams per liter elemental phosphorus; occurs in natural waters and wastewater almost solely as phosphates.

phosphorus, organic: phosphorus formed primarily by biological processes; sources of organic P in sewage include body wastes, food residues, and the conversion of orthophosphates in biological treatment processes.

phosphorus, total: all forms of phosphorus in effluent.

plasticity: the capability of a soil to be molded or deformed continuously and permanently, by relatively moderate pressure, into various shapes. *see also* soil consistence.

plow, chisel: a static plow shank used to slice the soils for the installation of drip tubing.

plow, vibratory: an oscillating plow shank used for installing drip tubing.

plug flow: a process in which fluid particles pass through a treatment device and are discharged in the same sequence in which they enter; the particles retain their identity and remain in the tank for a time equal to the theoretical detention time.

ponding: the standing of effluent on an infiltrative surface

porous-surface area ratio: (check media filter module for def)

portable toilet: a non-stationary, self-contained sewage tank including, but not limited to, port-o-lets, chemical toilets, privy holding tanks, and sewage tanks in recreational vehicles, motor coaches, trailers, and campers, whether mobile or stationary.

potable water: water that is safe for drinking and cooking.

prescriptive requirements: standards or specifications for design, siting, and other procedures and practices for onsite or cluster system applications.

pressure distribution system: an OWTS in which a pump is used to convey the effluent under pressure to a pretreatment or final treatment and dispersal component.

pressure-regulating valve (PRV): *see* valve, pressure-regulating.

pressure transducer: a device that measures pressure, converting that information to a measurement of depth or flow.

pressurized flow: *see* **flow, pressurized.**

pressurized main: primary supply line under pressure for distribution of water or effluent.

pressurizing flow: *see* **flow, pressurizing.**

pretreatment system: any technology or combination of technologies that precedes discharge to a final treatment and dispersal component.

primary treatment: a level of treatment associated with the removal of particles, typically by settling, with or without the use of coagulants; dissolved contaminants are not significantly removed in this treatment step.

privy: a structure used for disposal of human waste without the aid of water; it consists of a shelter built above a pit or vault in the ground into which human waste falls.

proprietary device or method: a device or method, or a component thereof, held under a patent, trademark, or copyright.

pump: a mechanical device for driving fluid flow, for raising or lifting a fluid, or for applying pressure to a fluid.

pump, centrifugal: pump consisting of rotating vanes (impellers) enclosed in a housing and used to impart energy to a fluid through centrifugal force.

pump capacity: the amount or rate of flow a pump can deliver at a certain head or pressure.

pump curve: a graphic representation of the performance of a pump in relation to the rate of flow against the total head, with the efficiency of the pump shown at points along the curve. these curves are generally established from actual run tests of the pumps.

pump station: a structure containing relatively large pumps and appurtenant piping, valves and other mechanical and electrical equipment for pumping water.

pump tank: a tank or compartment which contains volume for storage of effluent; a pump to convey effluent from the pump tank to another pretreatment process or to the final treatment and dispersal component; and floats to control operation of the pump; if a siphon is used in lieu of a pump, this configuration is called a "siphon tank."

pump vault: a device installed in a tank that screens the effluent before pumping.

rail: a device located within a pump tank that facilitates the removal or replacement of a pump

raw sewage: untreated wastewater

recirculating: design configuration wherein a portion of the effluent is returned to the treatment component for further treatment

recirculation ratio: amount of effluent returned to the treatment component compared to the amount of forward flow

reclamation: *see* **wastewater reclamation.**

recycled: *see* **wastewater recycling.**

relief line: *see* **stepdown.**

repair: work performed on an OWTS in order to mend or remedy a specific defect or deficiency after the failure, injury, deterioration or partial destruction of a previously existing OWTS or component thereof; a repair does not include any work performed on an existing owts that increases the capacity of the system.

reserve area: an area of land with demonstrated capacity for a final treatment and dispersal component upon which no permanent structure should be constructed and which is intended for replacement of the principal system should it fail.

reserve capacity: extra treatment capacity built into solid waste and wastewater treatment plants and interceptor sewers to accommodate flow increases due to future population growth.

residential strength wastewater: *see* wastewater, residential strength.

residuals: the solids generated and retained during the treatment of wastewater in treatment system components, including sludge, scum, and pumpings from grease interceptors, septic tanks, aerobic treatment units, and other components of an OWTS.

responsible management entity (RME): an entity responsible for managing a comprehensive set of activities delegated by the regulatory authority; a legal entity that has the managerial, financial, and technical capacity to ensure the long-term, cost-effective operation of onsite and/or cluster water treatment systems in accordance with applicable regulations and performance requirements (e.g., a wastewater utility or wastewater management district).

return line: the portion of the distribution system through which flushwater is routed back to a pretreatment device.

return flow: the volume of effluent necessary to properly flush the component.

reuse: *see* **wastewater reuse.**

riser: (i) housing that extends from a tank opening to the ground surface allowing an access for operation and maintenance. (ii) in spray irrigation systems, a term used for the vertical component of a supply pipe that terminates in a spray head.

rock: clean, graded material used as a distribution medium in a wastewater system treatment and/or dispersal component that is insoluble, durable, decay resistant, and the proper size to maintain void space.

rock fragments: unattached pieces of rock 2 mm in diameter or larger that are strongly cemented or more resistant to rupture.

rotating biological contactor (RBC): a type of attached growth pretreatment device consisting of disks oriented on a drive shaft which rotates, alternately exposing the attached microorganisms to the atmosphere and the wastewater.

run: the length of tubing in a lateral or a drip distribution system.

sample, composite: a combination of grab samples collected at the same sampling point at different times. *see also* sample, grab.

sample, grab: a discrete sample collected at a particular time and location; it allows only a snapshot of the water quality at the time the sample was taken.

sampling port: a location or apparatus in a system that will allow a sample to be collected for analysis.

sand: a soil particle between 0.05 and 2.0 millimeters in diameter. chemical composition does not influence the definition, only size.

sand filter: *see* **media filter.**

sanitary tee: a pipe configuration in the shape of a "T" that is located in a septic tank either on the inlet end to direct the incoming flow of effluent down into the liquid already present or on the outlet end to retain solids.

saturated soil: the condition of soil when all available pore space is occupied by water.

scarify: the roughening of the infiltrative surface prior to installation of a final treatment and dispersal component.

screen flow limit: flow rate at which a pump-vault screen exhibits a pass-through of solids.

scum: a layer of wastewater particles floating on the liquid surface in a septic tank.

secondary treatment: a biological treatment process coupled with solid/liquid separation.

sedimentation: *see* **clarification.**

seepage pit: an underground pit which receives septic tank effluent and from which the effluent seeps into the surrounding soil through the bottom and openings in the side of the pit.

seepage bed: *see* **bed, seepage**.

separation distance: *see* **vertical separation.**

septage: liquid or solid material removed from a septic tank, cesspool, portable toilet, type iii marine sanitation device, or similar domestic wastewater treatment works that receives only domestic wastewater

septic system: *see* **onsite wastewater treatment system (OWTS).**

septic tank: a water-tight, covered receptacle designed for primary treatment of sewage and constructed to receive the discharge of sewage from a building, separate settleable and floating solids from the liquid, digest organic matter by anaerobic bacterial action, store digested solids

through a period of detention and allow clarified liquids to discharge for additional treatment and final dispersal.

septic tank effluent: partially treated sewage that is discharged from a septic tank..

septic tank effluent pump (STEG): collection system using septic tanks and pumping systems.

septic tank effluent gravity (STEP): collection system using septic tanks without pumps

sequencing batch reactor (SBR): a sequential suspended-growth (activated sludge) process in which all major steps occur in the same tank in sequential order; sequencing batch reactors include intermittent-flow batch reactors and continuous-flow systems.

sequencing valve: *see* valve, sequencing.

serial distribution: distribution of sewage by gravity flow that progressively loads one section of final treatment and dispersal component to a predetermined level before overflowing to the succeeding section. this progressive loading does not place a dynamic head on lower sections of the soil treatment system, nor does the distribution medium function as a medium for conveyance to the next section

serial relief line: a simple overflow pipe connecting a trench to the next downslope trench.

service: the activity of monitoring, operation and maintenance of an OWTS.

setback: a minimum separation distance measured horizontally.

settleable solids: *see* **total settleable solids (T set S).**

settling: *see* **clarification.**

settling time: the time necessary for the removal of suspended or colloidal substance by gravitational settling, aggregation, or precipitation

sewage: untreated wastes from toilets, baths, sinks, lavatories, laundries, and other plumbing fixtures in places of human habitation, employment, or recreation.

sewage collection system: a system of pipelines, conduits, manholes, pumping stations, force mains, and all other structures, devices, and appurtenances that collect, contain, and conduct sewage from its sources to the wastewater treatment and dispersal system.

silt: mineral particles that range in diameter from 0.02-0.002 mm in the international system or 0.05-0.002 mm in the USDA system.

simplex system: a control that operates a single device.

single pass: design configuration wherein effluent moves through a treatment component only once.

siphon, dosing: a device used for transferring wastewater on demand from a tank at a given elevation to a dispersal component at a lower elevation. this is accomplished by means of suction created by the weight of the liquid in the conveying conduit.

siphon tank: *see* **pump tank..**

sludge: the accumulated solids generated during the biological, physical or chemical treatment, coagulation or clarification of wastewater.

smear: damage of soil structure and/or water infiltrative capacity during installation of a final treatment and dispersal component.

soil: (i) the unconsolidated mineral or organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. (ii) the unconsolidated mineral or organic matter on the surface of the earth that has been subjected to and shows effects of genetic and environmental factors of: climate (including water and temperature effects), and macro- and microorganisms, conditioned by relief, acting on parent material over a period of time. a product-soil differs from the material from which it is derived in many physical, chemical, biological, and morphological properties and characteristics.

soil consistence: an attribute of soil expressed in degree of cohesion and adhesion, or in resistance to deformation or rupture; consistence includes the resistance of soil material to rupture; resistance to penetration; the plasticity, toughness, or stickiness of puddled soil material; and the manner in which the soil material behaves when subjected to compression. general classifications of soil consistence include loose, friable, firm, and extremely firm.

soil morphology: (i) the physical constitution of a soil profile as exhibited by the kinds, thickness, and arrangement of the horizons in the profile, and by the texture, structure, consistence, and porosity of each horizon. (ii) the visible characteristics of the soil or any of its parts.

soil texture: the relative proportions of the various soil separates in a soil as described by the classes of soil texture shown in fig. 1. the textural classes may be modified by the addition of suitable adjectives when rock fragments are present in substantial amounts; for example, "stony silt loam." (for other modifiers *see* also **rock fragments**.) the sand, loamy sand, and sandy loam are further subdivided on the basis of the proportions of the various sand separates present. the limits of the various classes and subclasses are as follows:
soil texture *clay* - soil material that contains 40% or more clay, <45% sand, and <40% silt.
soil texture *clay loam* - soil material that contains 27 to 40% clay and 20 to 45% sand.
soil texture *loam* - soil material that contains 7 to 27% clay, 28 to 50% silt, and <52% sand.

soil texture *loamy sand* - soil material that contains between 70 and 91% sand and the percentage of silt plus 1.5 times the percentage of clay is 15 or more; and the percentage of silt plus twice the percentage of clay is less than 30.
soil texture *sand* - soil material that contains 85% or more of sand; percentage of silt, plus 1.5 times the percentage of clay, shall not exceed 15.
soil texture *sandy clay* - soil material that contains 35% or more clay and 45% or more sand.
soil texture *sandy clay loam* - soil material that contains 20 to 35% clay, <28% silt, and >45% sand.
soil texture *sandy clay loam* - soil material that contains 20 to 35% clay, <28% silt, and >45% sand.
soil texture *sandy loam* - soil material that contains 7 to 20% clay, more than 52% sand, and the percentage of silt plus twice the percentage of clay is 30 or more; or less than 7% clay, less than 50% silt, and more than 43% sand.
soil texture *silt* - soil material that contains 80% or more silt and <12% clay.
soil texture *silt loam* - soil material that contains 50% or more silt and 12 to 27% clay (or) 50 to 80% silt and <12% clay.
soil texture *silty clay* - soil material that contains 40% or more clay and 40% or more silt.
soil texture *silty clay loam* - soil material that contains 27 to 40% clay and <20% sand.

solenoid: a magnetically operated mechanical device (electric coil).

sorption: the action of adsorption and/or absorption.

source: the location at which wastewater is generated.

spauling:

spray dispersal system: an OWTS in which the effluent is distributed over the land surface via spray heads after it has been treated and disinfected.

spray irrigation system: *see* spray dispersal system.

spin filter: a filter used in drip distribution systems consisting of a screen of a particular size mesh enclosed in a cylinder through which effluent flows and is filtered.

spoil: soil removed from its original location-destroying the structure of the soil in the process.

spring: groundwater *see*ping out of the earth where the water table intersects the ground surface.

squirt height: operating pressure at the distal end of a pressure lateral, typically expressed in feet.

static plow: *see* plow, static.

stepdown: non-perforated pipe used for the purpose of connecting one effluent distribution component to another.

storage depth: the difference in elevation between operating level and high-water level.

stormwater: rainfall-generated runoff.

subsurface drain: any underground conduit used for the conveyance of surface or groundwater.

sump tank: a tank or pit that receives drainage of groundwater and stores it temporarily and from which the discharge is pumped.

supply line: a conduit between a source of effluent and the distribution system.

surface loading rate: the amount of effluent designed to be applied over an infiltrative surface expressed as gallons per square foot.

surface runoff: precipitation, snow melt, or irrigation in excess of what can infiltrate the soil surface and be stored in small surface depressions.

surface water: any body of water, whether fresh or marine, flowing or contained in natural or artificial unlined depressions for significant periods of the year, including natural and artificial lakes, ponds, springs, rivers, streams, swamps, marshes, and tidal waters.

surge flow: flow of effluent much higher than average or occurring for short periods of time in response to sudden releases.

suspended-growth processes: biological treatment processes in which the microorganisms responsible for the conversion of the organic matter or other constituents in the wastewater to gases and cell tissue are maintained in suspension within the liquid.

suspended-growth unit: a pretreatment device in which the microorganisms are in suspension with dissolved oxygen and wastewater constituents.

suspended solids: solid organic and inorganic particles that are held in suspension and are not dissolved.

synthetic distribution media: man-made distribution media.

tank: a watertight structure or container used to hold wastewater for such purposes as aeration, disinfection, equalization, holding, sedimentation, treatment, mixing, dilution, or other handling of chemical additives.

tertiary treatment: advanced cleaning of wastewater that goes beyond the secondary or biological stage, removing nutrients such as phosphorus, nitrogen, and most of the BOD and suspended solids.

textile: a synthetic fibrous material.

timer: a controller for automatically starting and/or stopping a device at a given interval.

topography: the physical features of the land surface including relative elevations.

total coliforms (TC): the group of bacteria used as pollution indicator organisms of water quality.

total dissolved solids (TDS): all material that passes the standard glass fiber filter, typically expressed as mg/l.

total dynamic head (TDH): a measure of the total energy that a pump must impart to the water to move it from one point to another. this is the sum of elevation head, friction head and operation head.

total organic carbon (TOC): a measure of the concentration of organic carbon determined by oxidation of the organic matter into carbon dioxide (NO_2) typically expressed in mg/l

total nitrogen: *see* **nitrogen, total.**

total settleable solids (T set S): suspended solids, expressed as milliliters per liter, that will settle out of suspension within a specified period of time.

total solids (TS): the mineral, cells, etc. left in wastewater after evaporation of the water fraction at 103 degrees C., typically expressed as in mg/l.

total suspended solids (TSS): a measure of all suspended solids in a liquid, typically expressed in mg/l. a well-mixed sample is filtered through a standard glass fiber filter, and the residue retained on the filter is dried to a constant weight at 217 to 221 degrees F. (103 to 105 degrees C.); the increase in the weight of the filter represents the total suspended solids.

toxic event: the introduction of a substance or substances that impair or destroy biological activity within a wastewater treatment process.

trash trap: the first component of an ATU having a limited detention time and used for the separation of solids.

treatment: any method, technique, or process designed to remove solids and/or pollutants from wastestreams.

trench: a final treatment and dispersal component consisting of an excavation with a width of three feet or less.

trickling filter: a type of media filter through which effluent moves at a continuous slow flow rate. *see also* media filter.

turbidity: a cloudy condition in water due to suspended silt or organic matter.

turn-up: a 90 or 45 degree change in pipe orientation from horizontal to vertical at the end of a pressure distribution line that effectively brings the pipe to grade and facilitates the periodic flushing of the lateral.

ultrasonic sensor: a device that measures fluid depth by transmitting and receiving sound waves.

ultraviolet (UV) light disinfection: a process for inactivating microorganisms by irradiating them with ultraviolet light. the ultraviolet waves disrupt the metabolic activities of the organisms, rendering them inactive and incapable of reproduction.

uniform distribution: the concept of distributing effluent evenly over the surface of a component over both time and space.

uniformity coefficient: a description of particle size distribution calculated by dividing that diameter of particle (in millimeters) of which 60% by weight is smaller, by that diameter of particle (in millimeters) of which 10% by weight is smaller.

unsaturated flow: movement of water in a soil or media that is not filled to capacity with water; the flow is along the surface of the particles rather than through the larger pore spaces.

unsaturated soil: soil in which the pore spaces contain water at less than atmospheric pressure, as well as air and other gases.

upflow filter: a treatment component with saturated media through which effluent flow from a lesser to a greater elevation.

vacuum breaker: a device installed in a system to facilitate air entry during depressurization.

value, color: the degree of lightness or darkness of a color in relation to a neutral gray scale. on a neutral gray scale, value extends from pure black to pure white; one of the three variables of color. *see* also M**unsell Color System**, **hue**, and **chroma**.

valve: a mechanical device installed in a system to close off, regulate or divert the flow of liquid or air.

valve, alternating: a device used to direct flow from one final treatment and dispersal component to another.

valve, ball: a valve with the closing and opening mechanism formed in the shape of a ball with a hole; rotating the ball orients the hole so that it is either: parallel to the flow, allowing liquid to pass, or: perpendicular to the flow thus shutting it off.

valve box: a housing that encloses an operating component and extends to the ground surface, allowing an access opening for its operation.

valve, bull-run: a type of alternating valve.

valve, buoyancy: a valve using a floating device to direct flows.

valve, check: a device that allows flow in one direction and that closes in the event of a reversal of flow.

valve, drain: a mechanical device that allows drainage of a distribution system.

valve, flush: a device used to control the expelling of effluent and accumulated materials from distribution systems.

valve, gate: a mechanical device used to turn on or shut off the flow of effluent; turning the stem raises a disk to allow flow or lowers it to shut off flow.

valve, pressure-regulating (PRV): a valve designed to maintain a set pressure on the downstream side of the valve regardless of pressure changes on the upstream or source side.

valve, sequencing: a valve used to direct flow to two or more final treatment and dispersal components one at a time.

vertical separation: means the depth of unsaturated, original material between the bottom of a dispersal component and the limiting condition.

vertical trench: a final treatment and dispersal component designed with 4 feet or more of media below the distribution pipe.

vibratory plow: *see* **plow, vibratory.**

virus: a minute organism not visible by light microscopy. a virus is an obligate parasite dependent on nutrients inside a cell for its metabolic and reproductive needs.

volatile organic compound (VOC): a class of organic compounds capable of turning to vapor that includes gases, liquids, and solids.

volatile: capable of turning to vapor.

volumetric: of or pertaining to measurement by volume.

waste sludge: matter generated in an aerobic treatment process that is removed from the process.

wastewater: means clear water wastes, stormwater wastes, domestic wastewater, industrial wastewater, sewage, or any combination of these.

wastewater, domestic: the type of wastewater normally discharged from or similar to that discharged from plumbing fixtures, appliances, and devices including, but not limited to sanitary, bath, laundry, dishwashing, garbage disposal and cleaning wastewaters.

wastewater, high-strength: effluent from a septic tank or other treatment device that has BOD_5 greater than 170 mg/l, and/or TSS greater than 60 mg/l, and/or fats, oils, and grease greater than 25mg/l.

wastewater, industrial: the water or liquid-carried waste from an industrial process; these wastes may result from any process or activity of industry, manufacture, trade, car wash or business, and are typically inorganic in nature.

wastewater, non-domestic: liquid or water-carried wastes other than domestic wastewater; includes wastes resulting from a manufacturing, food processing or production enterprise, an industrial establishment, car wash, the development of natural resources, the construction of a manufacturing, production or industrial facility, or stormwater runoff.

wastewater operation and maintenance: actions taken after construction of an OWTS to assure that facilities constructed to treat wastewater will be operated, maintained, and managed to reach prescribed effluent levels in an optimum manner.

wastewater reclamation: the treatment or processing of wastewater to produce water of a quality appropriate for its intended use.

wastewater recycling: the process of collection and treatment of wastewater for return back into the same water use scheme. manufacturing industries usually practice recycling on an individual-facility basis. in residences, occupants generally practice recycling by using the water for toilet flushing.

wastewater, residential strength: effluent from a septic tank or other treatment device with a BOD_5 less than or equal to 170mg/l, TSS less than or equal to 60 mg/l and fats, oils and grease less than or equal to 25 mg/l.

wastewater reuse: the process of collection and treatment of wastewater for uses other than its original use.

wastewater system: an OWTS or a system of wastewater collection, treatment and dispersal.

wasting: the process of removing activated sludge from the treatment process.

water quality-based performance requirement: a specific, measurable, and enforceable standard that establishes limits for pollutant concentrations or mass loads in treated wastewater discharged to groundwater or surface waters.

water table: the upper surface of groundwater or that level in the ground where the water is at atmospheric pressure.

water treatment discharge: the wastewater discharge from a water treatment device such as regeneration water from an ion-exchange unit, reject water from a reverse-osmosis unit, or the backwash from an iron filter.

watershed: the drainage basin area contained within the bounds specified by a divide and above a specified point on a stream.

watertight: a condition ascribed to a device that is constructed so that no water can get into or out of it except through designed inlets and outlets.

weir: a wall or obstruction of known geometric shape placed perpendicular to flow designed to measure or control the flow rate of water in a channel.

wetland: those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions; wetlands generally include swamps, marshes, bogs and similar areas.

zone of aeration: the unsaturated dry soil or rock located between the ground surface and the top of the water table.

zone of dispersal: means the permeable layers of soil or rock material below the zone of treatment which permit downward movement of the septic tank effluent and lateral movement of this effluent away from the area of the final treatment and dispersal component.

zone of treatment: means the upper suitable soil or fill material, below the infiltrative surface, which remove pollutants from the septic tank effluent by processes which include physical filtration of bacteria and other constituents, adsorption of viruses and bacteria by clay and organic matter, biological destruction of pathogens by soil microorganisms, chemical fixation or precipitation of phosphorous, biochemical transformations of nitrogen compounds and biological assimilation of phosphorous and nitrogen.

SOURCES

Some definitions were adapted from:

Arizona Department of Environmental Quality. Aquifer Protection Permits. R18-9-101. January 1, 2001. ADEQ. Phoenix, AZ.

Burks, B.D. and M.M. Minnis. 1994. Onsite Wastewater Treatment Systems. Hogarth House, Ltd. Madison, WI.

Crites, R. and G. Tchobanoglous. 1998. Small and Decentralized Wastewater Management Systems. McGraw-Hill. Boston, MA.

Eaton, Andrew D., Lenore S.Clesceria, Arnold E. Greenberg. 1995. Standard Methods for the Examination of Water and Wastewater. United Book Press, Inc. Baltimore, MD.

Harrison, Robert B. 1997. University of Washington Soils Glossary (Online). available at http://soilslab.cfr.washington.edu/s-7/soilglossary.html. (verified 1 Jan. 1997).

Hoover, M.T., T.A. Disy, M. A. Pfeiffer, N. Dudley, R. B. Mayer, and B. Buffington. 1996. North Carolina Subsurface Wastewater System Operator's Training School Manual. Soil Science Department, College of Agriculture and Life Sciences, North Carolina State University, Raleigh, NC and North Carolina Department of Environment, Health, and Natural Resources, Raleigh, NC.

Kahn, L., B. Allen, and J Jones. 2000. The Septic System Owner's Manual. Shelter Publications. Bolinas, CA.

Lenning, David. Technology Overview Module Draft, June 2002.

Loudon, Ted. Septic Tank Module Draft, June 2002.

Neufeldt, Victoria, Ed. Webster's New World Dictionary, Third College Edition. 1988. Simon & Schuster, Inc. New York, NY.

Senese, Fred. 2001. General Chemistry Glossary (Online). available at: http://antoine.frostburg.edu/chem/senese/101/environmental/glossary.shtml. (verified 14 Jan. 2002).

Soil Science Society of America. Internet Glossary of Soil Science terms (Online). available at: http://www.soils.org/sssagloss/. (verified Feb. 1997).

Symons, James M. Lee C. Bradley, Jr. and Thedore C. Cleveland. 2000. Drinking Water Dictionary. American Water Works Association. Denver, CO.

Trotta, P., J. Ramsey, and S. Hoban. 2000. The Basics and Fundamentals of Onsite Wastewater Treatment course. Northern Arizona University. Flagstaff, AZ.

U.S. Environmental Protection Agency. 2000. Draft EPA Guidelines for Management of Onsite/Decentralized Wastewater Systems. USEPA.

Still need info on these for proper documentation:

http://www.davidse.com/glossary/%2dd.htm

(33 CFR8.3(b); 1984