

Connecticut P-1 & P-2 Continuing Education

Chapter 3.3 Gray Water Systems

Definitions

Active Sludge –

Sewage sediment, rich in destructive bacteria that can be used to break down fresh sewage more quickly.

Bacteria, Aerobic-

Bacteria living, active, or occurring only in the presence of oxygen.

Bacteria, Anaerobic-

Bacteria living or growing in the absence of oxygen. Anaerobic bacteria get their oxygen by decomposing compounds containing oxygen.

Bacteria, Facultive Anaerobic-

Bacteria having the quality of being able to live or thrive under more than one set of conditions with or without oxygen.

Bacteria, Parasitic-

Bacteria having the quality of living in or on another organism for existence or support without making a useful or adequate return.

Definitions

Bacteria, Saprophytic-

Bacteria having the quality of obtaining food by absorbing dissolved organic decay from the product of organic breakdown and decay.

Digester-

A covered tank in which digestion of sewage sludge is carried out.

Effluent-

Waste material, the out flowing water or waste from a septic tank.

Filtration-

The flow or trickling of a liquid downward through a contact or filtering medium, the liquid may not fill the pores of the medium.

Pathogenic-

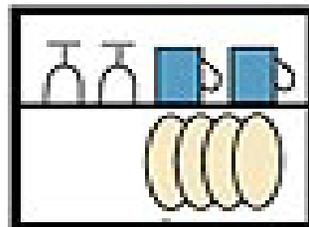
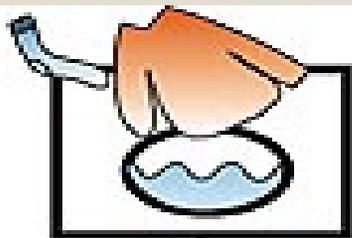
Capable of causing disease, containing bacteria or viruses.

Gray Water

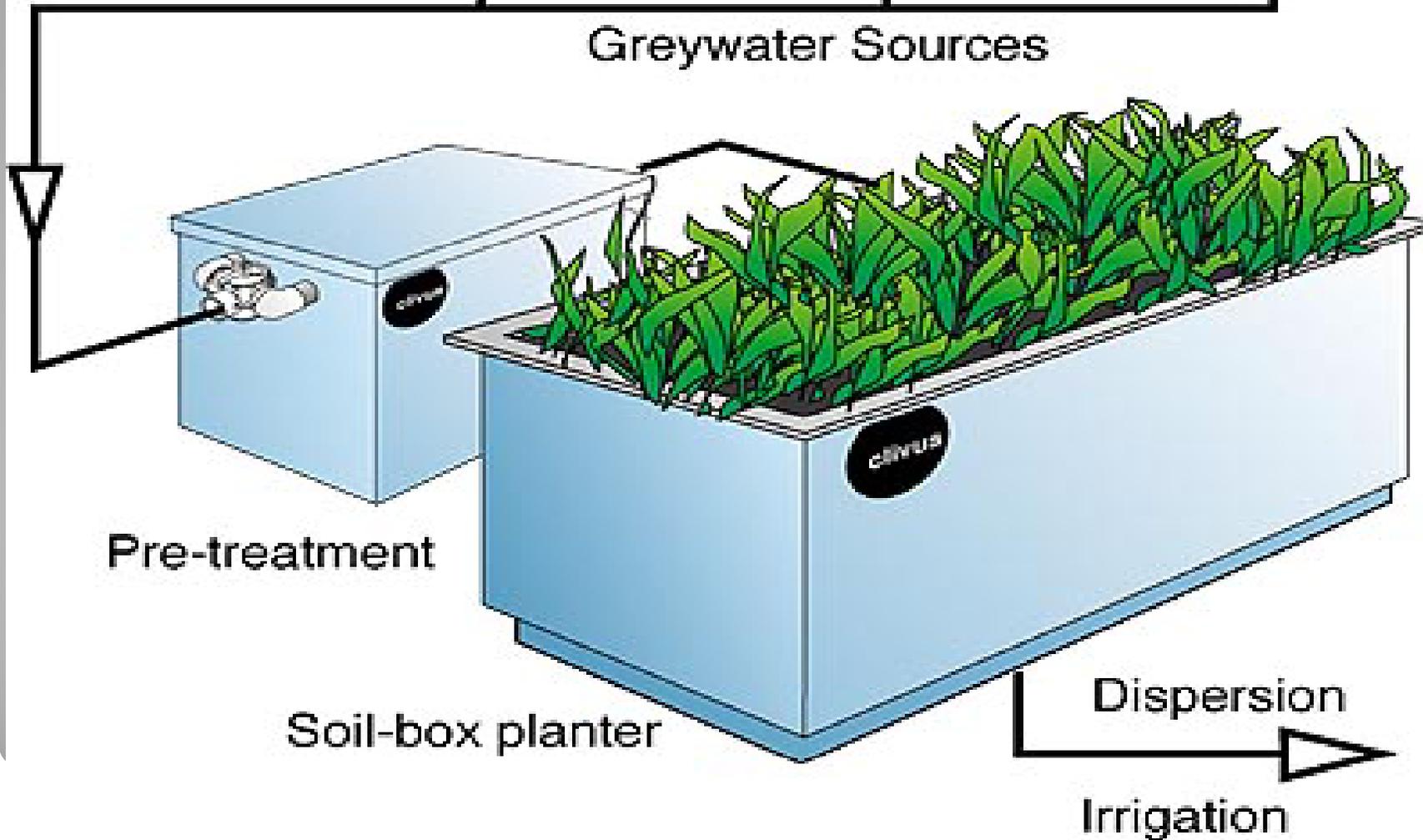
- Grey water is wash water from, washing machines, dishwashers or personal hygiene fixtures such as lavatories, showers and tubs
- Grey water contains no human waste.
- Waste water that contains human waste is classified as black water
- Grey water
 - contains far less nitrogen
 - which is very difficult to remove and is rated as one of the most serious pollutants to drinking water.
 - contains far fewer pathogens
 - which are main contributor's to diseases.
 - decomposes much faster
 - this leads to a faster stabilization which enhances the prevention of water pollution.

Aerobic Pre-Treatment

- Good for..
 - Showers
 - Hand washing
 - Laundry
- Stretch filter protects the infiltration piping by removing large fibers and particles.
- Filter will hold the larger particles and fibers and lets the remaining organisms advance to the next process.
- Mostly used in public building where food is not introduced into the system which will then become anaerobic and causes the effluent to become malodorous making for a high maintenance scenario.



Greywater Sources



Pre-treatment

Soil-box planter

Dispersion

Irrigation

Anaerobic to Aerobic Pre-Treatment

- When foods from dishwashers and kitchen sinks are part of the plumbing, the following option is recommended.
 - Three stage septic tank
 - For sludge and grease
 - Effluent outgoing from the tank is anaerobic
 - Can be removed every 4th year rather than bi-yearly.
 - Sand Filter
 - Restores aerobic conditions
 - Last stage is treatment in a planter bed

Filtering System

