

# Safety and Health

## Why You Need Good Sewage Treatment

A septic system is professionally designed to treat sewage for a specific home, business, or group of properties. Proper treatment of sewage *recycles* water back into the natural environment with reduced health risks to humans and animals and also prevents surface and ground water contamination.

### Risks to Human and Animal Health

It is unhealthy for humans, pets, and wildlife to drink or come in contact with surface or ground water contaminated with sewage.

Inadequate treatment of sewage allows bacteria, viruses, and other disease-causing pathogens to enter surface and ground water. Hepatitis, dysentery, and other diseases may result from pathogens in drinking water. Disease-causing organisms may make lakes or streams unsafe for recreation. Flies and mosquitoes that are attracted to and breed in wet areas where sewage reaches the surface also may spread disease.

Inadequate treatment of sewage can raise nitrate levels in ground water. High concentrations of nitrate in drinking water can be a special risk to infants, pregnant women, and adults with compromised immune systems. Nitrate affects the ability of blood to carry oxygen; in infants this condition is called methemoglobinemia (blue-baby syndrome). Air quality may also be affected by a septic system; an inadequately vented plumbing system may release odorous or toxic gases into the home.

### Risks to the Environment

A septic system that fails to fully treat sewage may allow excess nutrients (phosphorus and nitrogen) to reach nearby lakes and streams, promoting algae and plant growth. Algal blooms and abundant weeds may make lakes unpleasant for swimming, boating, and other water-based activities. This plant growth can also affect water quality for fish and wildlife habitat. As plants die and settle to the bottom, they are broken down by bacteria that use up oxygen that fish need to survive.

Many synthetic cleaning products, pharmaceuticals, and other chemicals used in the house can be toxic to humans, pets, and wildlife. If allowed to enter a septic system, these products may reach ground water, nearby surface water, or the ground surface.

### Treatment Reduces Risks

Microorganisms in soil treat wastewater physically, chemically, and biologically before it reaches the ground water, preventing pollution and public health hazards. As septic tank effluent percolates through the soil treatment area, it is purified and in most cases requires no treatment at all before being consumed. However, when the soil is overloaded with water, or when a specific contaminant cannot be treated by the soil, the quality of the underlying ground water may change significantly. ***Even systems that appear to be working well or were previously permitted because they were thought to provide good treatment may allow nutrients or pathogens to reach surface or ground water.*** The only way to guarantee effective treatment is to have a trained professional ensure adequate unsaturated and suitable soil exists below the soil treatment area to allow for complete wastewater treatment.

Figure 1 – Improperly functioning septic system

