



## FLOOD RECOVERY: DRINKING WATER AND WASTEWATER

When flooding disrupts drinking water supplies or covers plumbing fixtures, dirty water can back-siphon into home plumbing and into homes or buildings. When sewage or septic systems back up, they contaminate structures.

Floodwaters are considered to be contaminated because they carry sewage and other pollutants. This type of contaminated water is commonly referred to as brown or black water. As floodwaters rise and spread, the contaminated water flows into structures, bringing disease-causing organisms.

Materials contaminated with brown or black water present an acute health risk if they are not properly cleaned and removed. Viruses, bacteria, protozoans and worms in the floodwater or in its debris can cause disease.

### What are the hazards and what can they do?

Human waste contains many organisms that can cause disease. These organisms reside in the digestive tract and intestines of people where they may not cause any adverse health effects. Human “carriers” exist for all types of diseases. A proportion of those carriers excrete the disease-causing organisms in their feces. If a person contacts items contaminated by sewage, they could become ill with intestinal diseases.

### Disease transmission factors

A more common problem associated with exposure to contaminated floodwaters is wound infection. People contacting floodwaters or areas contaminated by floodwaters should follow good personal hygiene. If they have a wound or other break in the skin, they should seek prompt medical care. The most common source of *Clostridium tetani*, the bacteria that causes tetanus, is human feces. Contaminated floodwaters may also contain infectious strains of *E. coli*, such as antibiotic resistant *E. coli*.

### Cleanup

Minimize the risk of disease by properly cleaning areas contaminated by sewage backup or floodwaters. Clean floors with a 10% bleach solution (or other comparable commercially available disinfectant). Replace contaminated carpets or have them cleaned by a professional cleaning contractor. Do not mix bleach with household cleaning products.



Wash contaminated skin thoroughly with warm soapy water for a minimum of ten (10) minutes. Persons with weakened immune systems are at increased risk from exposure to brown or black water. Contaminated laundry should be either be bagged and properly disposed; or washed separately in hot water with a 10% bleach solution. Some professional cleaners may be able to clean contaminated clothing.

If you are served by a public water system, thoroughly flush all water lines, including hot water lines. Ask your water company if they are disinfecting the water lines. You may notice a strong odor of chlorine while this is occurring. Only use the water for cooking, drinking or washing when the water company says it is safe to do so.

If you have a private well, call an electrician to ensure it is safe to turn the well pump back on. Have a licensed plumber or well driller disinfect your well and flush hot and cold water lines inside the house or building. Test it for bacteria and nitrates before using the water for cooking, drinking or washing. For information on sampling and testing your well, contact the Office of Drinking Water at (302) 741-8630.

## **Storm water**

Do not allow children to play in or around storm water collection drains or outfalls, or in water of questionable origin. In some locations, during periods of heavy rain, raw sewage overflows contaminate storm water systems. Additionally, storm water runoff may be contaminated with fecal matter from pets or agricultural animals. Their fecal matter is also capable of transmitting many of the diseases outlined above.