



Flood advice for drinking water systems

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Floods are one of the most common and widespread of all natural disasters. Most communities have experienced some degree of flooding following heavy rain or spring and winter thaws. Floods pose a particular threat to drinking water systems because floodwaters often carry contaminants that can make consumers sick. If source water or any part of the water distribution system flood, these contaminants can end up at consumer taps. This fact sheet provides advice you can use in response to the threat of biological contamination. If you suspect that chemicals have entered the water system, warn your customers not to use the water and contact our regional office.

How floods contaminate drinking water

Surface water sources: Increased water flow during a flood often makes rivers and streams very cloudy. Elevated turbidity in source water could make it impossible for a water system's treatment plant to effectively treat water. If that occurs, the water system may have to rely on emergency storage capacity or an emergency water source.

Either way, you will have to ask customers to conserve water. That request can confuse customers when flooding and heavy rains make it look like there is water everywhere.

Even if your water system can overcome high turbidity, the change in disinfection levels may cause taste or odor problems in the treated water.

Groundwater sources: Contaminants can enter the water supply if the wellhead or the areas immediately around the wellhead flood.

Distribution systems: Contaminants can enter the water distribution system if a significant loss of pressure occurs when all or part of the service area floods.



A 2007 flood completely submerged I-5 in Lewis County and damaged several area water systems. (Photo courtesy of Washington Department of Transportation.)

What to do when the weather forecaster predicts flooding in your area

- Have enough coliform sample bottles on hand to sample each well and the distribution system daily for at least a week.
- If you routinely disinfect your water system with chlorine, increase the chlorine level. This will not ensure your drinking water will remain safe, but it will make it easier to monitor chlorine residuals in your water system. A drop in the chlorine residual may indicate contaminated water entered your water system.

What to do if your well floods

- Advise residents to kill disease-causing bacteria and parasites by bringing their drinking water to a rolling boil for one minute and cooling it to an appropriate temperature before use. Do this even if you chlorinate your water system because your treatment may not be effective against contaminated floodwaters.

- Collect coliform samples at your well and throughout the distribution system as soon as you are able to gain safe access. Exercise extreme caution any time an electric power supply component is under or near floodwater.
- Contact us anytime you advise customers to boil their water, or when water test results show coliform bacteria is present.

What to do if your distribution system floods

- Monitor chlorine residuals and system pressure as soon as you can safely gain access to the system and its control facilities.
- If the water system loses pressure at any time while the area is flooded, advise residents to kill disease-causing bacteria and parasites by bringing their drinking water to a roiling boil for one minute and cooling it to an appropriate temperature before use. Collect coliform samples throughout the flooded area. If results are satisfactory, you can let your customers know the water is safe to drink.
- If you are monitoring chlorine levels and notice a drop in the residual while the area is flooded, advise residents to bring their drinking water to a roiling boil for one minute and cool it to an appropriate temperature before using. Collect coliform samples throughout the flooded area, especially in the area where chlorine residual is low. When the results for all the samples are satisfactory, the water is safe to drink.
- Even if you don't believe your water system flooded, plan to collect extra coliform samples to verify that your water is safe to drink.
- Contact us anytime you advise customers to boil their water, or when water test results show *E. coli* bacteria is present.

Communicate with your customers

- Your customers' perception of risk during a flood may be high. They need timely and accurate information about the quality of their drinking water.
- Not all customers experience the same flooding conditions. Some may feel a direct threat from floodwaters, while others do not. It's important to know your water quality and communicate to all customers.
- Be conservative and informative, not sorry later on! Make sure your customers have the information they need to make good decisions about their drinking water.

Where to go for help

Visit us at doh.wa.gov/Emergencies/EmergencyPreparednessandResponse/Floods or call our nearest regional office. After hours and weekends 877-481-4901.

[Eastern Region](#) Spokane Valley (509) 329-2100.

[Northwest Region](#) Kent (253) 395-6750.

[Southwest Region](#) Tumwater (360) 236-3030.

You can also call your local health or emergency management agency. Get contact information at access.wa.gov/emergency/index.aspx.



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