



Drinking Water Guidelines for Flooding Incidents

Winter storm season can bring record rainfall to the Valley floor. However, at higher elevations, these storms also bring abundant snow and ice. As temperatures rise, melting snow makes its way into streams, rivers, lakes, etc. that are already at or over capacity, causing the potential for flooding. For private wells in areas vulnerable to flooding incidents, the following guidelines are recommended to help ensure that users on private wells have access to safe, potable drinking water during an emergency situation.

Disaster Preparedness

Some steps can be taken before a disaster strikes. **Water Storage** and **Wellhead Protection** are two key ways to help maintain sources of safe drinking water during and after a disaster.

Water Storage should be done using clean containers of food grade quality, which have tight-fitting lids (e.g. two-liter soda bottles). For water that is already treated with chlorine, no further treatment is necessary. For untreated water, unscented household bleach can be used to keep the water safe from bacteriological contamination. Use eight (8) drops of bleach per gallon of clear water or sixteen (16) drops of bleach per gallon of cloudy water. Label the bottles with the date they were filled, and store in a cool, dark place. Water stored in this way should only be kept for up to six (6) months.

Water can be boiled, prior to bottling, in order to eliminate any bacteriological contamination. However, for water that has high or unknown levels of chemical contamination, boiling will only increase the concentration of these chemicals and potentially make the water unsafe for drinking. For water that is known to have low levels of chemical contamination, the water can be boiled and bottled after being allowed to cool. Household bleach should be added, as mentioned above, before storage.

Bottled water can also be purchased and stored for use in an emergency, and does not require any treatment. The bottles should be left sealed until they are needed. Bottled water can be stored in cool, dark places for up to one (1) year.

Wellhead Protection can prevent the well becoming contaminated regardless of whether or not a disaster strikes. Securing the wellhead means making sure there are no openings or loose fittings at the top of the well that can allow water or insects to get inside. The tightening bolts, distribution line, electrical conduit and chlorination port are all potential points of entry into the well that should be kept water-tight and insect-proof. Also, the concrete pad around the well should be free of cracks, splits and debris. In case of flooding in the area, the ground around the well should slope away so that surface water, which may be contaminated with sewage or other hazardous substances, will not pool around the top of the well.



During a Flooding Incident

Even if the well is not directly affected by flood waters, a loss of electrical power is a concern during emergency situations. Without electricity, the pump in the well will not operate, and alternate sources of drinking water will need to be found until power is restored. It may be necessary to ration what drinking water is on hand. Below is a chart on a recommended way to ration water: Activity	Gallons per Person per Day
Drinking and Cooking	1 Gallon
Personal Hygiene	1 Gallon
Laundry and Dishwashing	2 Gallons

If four (4) gallons of water per person per day is not available, a minimum of two (2) gallons per person per day should be rationed for drinking, cooking and personal hygiene. Any extra water should be used conservatively for laundry and dishwashing. Infants, children and the elderly should not ration water if possible. Dehydration can cause many health problems in these groups. If supplies of drinking water drop to critical levels, there are alternate sources around the home that can be used. A **water heater** can hold up to 80 gallons of water. To access this water, shut off the main water valve to the house, and turn off the gas or electricity to the water heater. Vent the tank by disconnecting the hot water line at the top of the heater, then use a clean bucket to catch water from the faucet at the bottom of the heater.

The **plumbing lines** of a house can hold an additional 10-20 gallons. To collect this water, shut off the main water valve to the house, then open a faucet at the highest point of the home. Place a clean container under a faucet at the lowest point of the home and open the faucet slowly.

Each **toilet tank** holds a gallon or two of water. Do not use for drinking if cleaning chemicals are added to the tank. **Swimming pools** are also a source of water that can be used for non-drinking purposes (due to the chemicals used). Liquids from **canned foods** can also be used for drinking.

After the Incident

Once the emergency situation has subsided, there are still things to do to make sure that the well was not affected, and will produce safe, potable drinking water. If the well was inundated with water, or if power was lost, it is recommended that the well and distribution system be disinfected in order to make sure that bacteriological organisms did not infiltrate the water supply.

*****If the well was flooded or lost power, use caution when restoring electricity to the pump.*****

To disinfect, use unscented household bleach and pour a half-gallon down inside the well. If there is a storage tank, add a half-gallon of bleach for every 5,000 gallons of storage. Once done, open all the cold water taps inside the house, and all spigots outside the house until chlorine can be smelled at each. (Do not use the hot water taps as the chlorine will damage the water heater.)

Once chlorine is detected at all the open taps, shut them off and leave them off for 24 hours. After this time, open all the taps as before until the chlorine smell can no longer be detected. At this time, a sample can be collected and taken to a laboratory to be analyzed for bacteriological contamination. Sampling directions, and a list of laboratories are attached to this guide.

Final Words



HHSA
Public Health

Environmental Health Services
WWW.TULARECOUNTYEH.ORG • (559) 624-7400

When an emergency situation arises, access to safe and potable drinking water is essential. Being prepared for when a disaster occurs, having options of where to find water during an emergency and knowing how to ensure an affected water supply is safe after an emergency happens are important ways to stay safe and healthy.