



ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION ***EARTHQUAKE: Drinking Water & Septic Systems***

The Alaska Department of Environmental Conservation (ADEC) is available to provide technical assistance to homeowners on their environmental issues associated with earthquakes.

The following is information and contacts that homeowners may find helpful in assessing their property during disaster recovery.

Drinking Water Supply System

Did your water change color, does it smell different, has the flow rate changed, or do you have other concerns? If so, the following is a summary of considerations that should be taken; the paragraphs in the next section provide more details:

- Inspect your well for visible damage.
- Use an alternate water supply until you can confirm the water is safe.
- Boiling the water temporarily may be necessary.
- Let the cloudiness settle out or flush the well clean following the recommended procedures below.
- Test your water for potential contamination.
- Disinfect following the recommended procedures below.
- If there is prolonged cloudiness or it continues to be cloudy after flushing, changes below the surface may have occurred.
- Consult a groundwater professional (e.g., well contractor, professional engineer or hydrologist).

Following an earthquake, private well owners may notice changes in the appearance of their water supplies, may have concerns about the quality of their water supply, or may have noticed a change in the supply rate. Well owners, especially those close to the epicenter, should inspect the structural integrity of their well and also the clarity of the water coming from the well. There is a possibility that the ground shaking of an earthquake can stir up sediments and cause your drinking water to be cloudy and discolored. This cloudy condition should clear itself up in a relatively short time (e.g., hours or days), once the sediments have a chance to settle.

If structural damage is noted, your well produces cloudy water for an extended period of time, or the well suddenly does not produce an adequate amount of water, you should have your well checked by a groundwater professional (i.e., well contractor, professional engineer, or hydrologist).

- [More information about private wells and well contractor's information](https://dec.alaska.gov/eh/dw/dwp/private-wells/)
(<https://dec.alaska.gov/eh/dw/dwp/private-wells/>)

Well owners who observe sediment in the water supply should use an alternate source of water until the water supply is safe. If in doubt regarding water quality, as a precaution, ADEC advises that water used for drinking, cooking, hand washing, or dish washing, should be boiled (rolling boil for at least 1 minute).

If the water has become cloudy, it may be cleared by either letting it settle for several hours or by flushing. Flushing can be accomplished by hooking up a garden hose and letting it drain at a low flow rate until it becomes clear. Caution should be given to where the water drains such as to an area that is clear of hazards and does not impact neighboring properties. For low flow wells, the draining should be low enough that the water in the well doesn't draw down too far and possibly cause excessive wear to the pump.

As a precaution for bacterial contamination once the water has cleared up (free of sediments) ADEC recommends that homeowners disinfect their well with chlorine bleach. See the [U.S. Center for Disease Control's, "Disinfecting Wells After a Disaster."](https://www.cdc.gov/disasters/wellsdisinfect.html) (<https://www.cdc.gov/disasters/wellsdisinfect.html>) During the disinfection procedure, the water will not be drinkable, therefore, a 24-hour supply of either bottled or boiled water should be on hand before the procedure is

started. Plan to disinfect the well late at night or at other times when there is little need for water. After the disinfection procedure is completed, ADEC recommends to have your water tested for total coliform bacteria, to ensure that it is safe to drink. Additional sampling recommendations are for nitrate, and if you are in an area with naturally occurring deposits of arsenic, you may want to have your well tested for arsenic levels after an earthquake.

- [Contact Information for Certified Labs in Alaska](http://dec.alaska.gov/applications/eh/EHLabStatus/MicroReport/Index)
(<http://dec.alaska.gov/applications/eh/EHLabStatus/MicroReport/Index>)

If you detect a fuel spill near your well, contact your local ADEC office to report the spill. You may want to have your well water tested to see if it may be contaminated with petroleum products that could pose a health risk to you and your family. For specific testing of your well water, ADEC recommends that you talk with an independent, state-certified laboratory about the problem you suspect and their recommendation for sampling analysis.

Note: Chlorine disinfection will not eliminate fuel contamination in your well water.

Household Water Usage in the Event of Possible Well Contamination

Please be aware that your well may have been adversely impacted by the earthquake. If you are in the earthquake zone, please take the following precautions if you are going to use your well water for drinking, cooking, brushing teeth or washing produce:

- Use only bottled or purified water for drinking, diluting fruit juices, making formula, all other food preparation and for tooth brushing.
- Dispose of ice cubes and do not use ice from a household automatic icemaker until the supply is determined safe.
- Disinfect dishes and other food contact surfaces by immersion for at least one minute in water that contains one teaspoon of unscented household bleach per gallon of water.
- Water used for bathing does not generally need to be boiled; however, close supervision of children is necessary to make sure that it is not ingested.
- Do not depend on water treatment devices to adequately purify contaminated water.

Disinfecting Water

If the water is cloudy:

- Filter it through a clean cloth, paper towel or coffee filter or allow it to settle.
- Draw off the clear water.
- Bring the clear water to a rolling boil for one minute.
- Let the boiled water cool.
- Store the boiled water in clean, sanitized containers with a tight cover.

If the water is clear:

- Bring the clear water to a rolling boil for one minute.
- Let the boiled water cool.
- Store the water in clean, sanitized containers with a tight cover.

If boiling your water is not possible, you can make your well water safe by using a disinfectant such as unscented household chlorine bleach. To disinfect your water:

- Filter it through a clean cloth, paper towel or coffee filter or allow it to settle.
- Draw off the clear water.
- Put it in a clean container.
- To use bleach, add 1/8 teaspoon (or 8 drops) of unscented liquid household chlorine bleach (5-6%) for each gallon of water (or 2 drops for each quart of water).
- Stir the mixture well.
- Let it stand for 30 minutes before you use it.
- Store the disinfected water in clean, sanitized containers with a tight cover.

EARTHQUAKE: Drinking and Waste Water

Many portable water filters can remove some disease-causing organisms, such as parasites, but are unable to remove bacteria and viruses. Carefully read and follow the manufacturer’s instructions for the water filter before you use it. After filtering, add a disinfectant such as unscented, liquid household bleach to kill any remaining bacteria and viruses.

Onsite Wastewater Disposal System (Septic System)

Onsite wastewater systems are buried in the ground and can become damaged during an earthquake. If the earth moves enough, this can damage the system enough to make it malfunction. After an earthquake, perform an inspection of your system by looking for the following.

Inside the home:

- Unusually sluggish draining of sinks, toilets, tubs and showers
- New sewer odors in the home
- Water backing up in downstairs tubs

Outside the home:

- Heaves or depressions in ground above your septic tank or drainfield
- Signs of sewage on the ground or odors
- Assure vent tube caps are still on
- Assure tank access lids are on and bolted or locked in place
- Soft, wet or defrosted areas near septic tank or drainfield

If any of these conditions are present, you should contact a licensed professional engineer, a certified installer (list available on website listed below), or a septic professional in your area. If you suspect your system is damaged, you should limit use of water in the home until the system is inspected and keep people and pets away from the system until it is inspected.

- [Additional information and local contact information \(www.dec.alaska.gov/water/wastewater/engineering/\)](http://www.dec.alaska.gov/water/wastewater/engineering/)

For additional information please contact the ADEC Disaster Coordination Team:

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