

## Water Quality Concerns from Wildfire – 2014 Update

*The water quality consequences of wildfire may produce significant and immediate impacts on fish and other aquatic organisms, drinking water supplies and wastewater treatment systems. These impacts are cumulative as a result of pollutants mobilized by the fire, chemicals used to fight the fire and the post-fire response of the landscape. ADEQ has developed both short-term and long-term strategies to respond to water quality issues arising from wildfire.*

### DRINKING WATER CONCERNS

***I get my drinking water from a private well. How do I know if it's safe to drink?***

If you have your own domestic or private well that is used to supply drinking water to your household and your property is located within an area burned by wildfire, you should follow the advice contained in the ADEQ brochure entitled Private Wells After the Fire <http://www.azdeq.gov/environment/water/dw/download/privatewells.pdf>.

***How do I find a laboratory that can perform bacteria and other tests to ensure my water is safe to drink?***

A number of certified laboratories are located throughout the state. They can be found in the yellow pages of the telephone directory under Laboratories - Testing. The Arizona Department of Health Services (ADHS) also maintains a list of licensed and certified environmental laboratories. If you can't find a laboratory in your area, contact ADHS at (602) 364-0720 to get names and phone numbers of laboratories licensed to perform drinking water analyses.

***How can I get a copy of the instructions on how to disinfect my water for drinking purposes?***

ADEQ has prepared instructions for owners of domestic wells who are uncertain whether their water is safe to drink.



*The Emergency Disinfection of Drinking Water chart is at the end of this fact sheet or can be downloaded at: [www.azdeq.gov/environment/water/dw/download/disinfec.pdf](http://www.azdeq.gov/environment/water/dw/download/disinfec.pdf).*

***I get my water from a public drinking water system. Is my water safe to drink?***

When wildfire burns through an area that contains a public or regulated drinking water system, ADEQ will perform an inspection of the system prior to its resuming operation. If the inspection finds the system has been damaged, ADEQ will issue a "boil water advisory" in the local papers and on its website. If your water system is listed on an ADEQ boil water advisory, you should follow the instructions included in the advisory for obtaining an alternative source of potable water (e.g. bottled water), boiling the water or disinfecting the water with household bleach before consuming. If your public water system is not listed in an advisory, the water is considered safe to drink.

***I don't know whether I get my water from a regulated public water system. How can I find out?***

Regulated public water systems serve 25 or more people or 15 or more households. If you pay a monthly water bill or if you know there are more than 25 persons or 15 households connected to the same water system as you are, you are most likely getting your drinking water from an ADEQ regulated public water system. If you have any question about the status of your water, contact ADEQ's Drinking Water Program listed at the end of this fact sheet.

***Is it OK for me to take a shower and flush my toilet before I hear the water and system are OK?***

Yes, it is reasonably safe for you to take a shower. However, care should be taken to minimize ingesting water by mouth. You may flush your toilets with the water coming into your home.

***Can I use the water in my household to wash dishes by hand or in the dishwasher before I hear that the water and system are OK?***

No, it is not advisable to wash dishes or other food utensils with the water coming into your house until you have received notification from ADEQ that your water is safe to drink. If you have dishes or cooking utensils that need to be washed, you should use either bottled or boiled water.

***Can my pet drink from the water coming into my house before I hear that the water and the system are OK?***

Generally, the amount of bacteria that can safely be consumed by common household pets is much higher than it is for humans. However, you may wish to consult your veterinarian for additional pet-related questions.

**WASTEWATER CONCERNS**

*Did the fire affect my septic system?*

Areas often hit hardest by wildfire use on-site (septic) systems for wastewater treatment and disposal. Fire will generally have little effect on septic systems since the tank and leach field are usually several feet underground. Other wastewater treatment systems with surface features, such as mounds, could be damaged. Firefighting activities, such as the digging of fire breaks or the use of heavy equipment, may also damage some systems. When allowed to return to your home or business, check the area around your wastewater treatment system for signs of damage. Both ADEQ and the county environmental health department will work with homeowners and businesses to ensure that these on-site disposal systems are operating properly.

*What should I do if I see sewage on the surface?*

First, try to limit access to the area – especially by children and pets. Next, carefully disinfect the area with chlorine. Lastly, contact either ADEQ or your county environmental health department for assistance in evaluating the condition of your wastewater treatment system.

**WATER QUALITY CONCERNS**

*Is there any danger from the smoke and ash to fish and wildlife?*

The primary impacts to fish and wildlife will be from runoff from burned areas entering streams, rivers and lakes. The runoff may carry extra sediment and ash which can kill fish by robbing the streams of oxygen. Fires also release pollutants that are normally found in soil and in living and decaying plants that are washed into streams and lakes either through runoff or transported through the air.

*What effect will the fire (ash and smoke) have on the lakes and streams?*

After a fire there are concerns about streams flooding when burned areas



receive heavy rainfall. Vegetation and forest litter that once slowed runoff are gone. This means an increased amount of sediment and ash will end up in the water. Once the fire is contained, ADEQ will work with the Forest Service and other federal agencies to conduct water quality sampling on area streams and lakes to determine the immediate impacts from the fire. ADEQ's initial focus will be on perennial streams and lakes that serve as drinking water sources for local communities. We will also develop a long-term strategy to study the impacts of the fire on water quality and to monitor the recovery of the surface waters as well as the health of fish and wildlife.

*What will happen when it does rain?*

Some of the most important concerns after a fire are erosion, landslides and flooding in areas where the vegetation that once stabilized the soil has been destroyed by fire. ADEQ will be working with the Forest Service and other state and federal agencies to assess the conditions and stability of the watersheds and to implement measures to reduce the immediate harmful impacts of landslides, flooding, and water pollution.

*Is there any danger to humans or animals from the fire retardants?*

Fire retardants are fire-suppression chemicals used to slow or smother

wildfires. Most of ingredients in these products are common chemicals found in fertilizers (ammonia, nitrogen and phosphorus), household cleansers, soaps, cosmetics and paints. Generally, exposure to the retardants results in minimal problems for humans. The usual complaints are of mild skin and eye irritation. These chemicals also have minimal effects on wildlife, vegetation and soils.

*Is there any danger to the fish or the lakes and streams from the fire retardants?*

The firefighting chemicals can have adverse impacts on water quality and ultimately on fish and other aquatic life. The retardants can cause fish kills if applied directly over lakes and streams. This is because ammonia nitrogen is in many of the retardants and ammonia is very toxic to fish. Retardants may also contain large quantities of nitrogen and phosphorus which if flushed into a stream or lake can use up all the oxygen in the water body. If the retardant has not been sprayed directly over lakes and streams, the possibility of runoff will depend largely on the amount of rainfall, the steepness of the terrain, and the size of the receiving stream or lake.

**EMERGENCY DISINFECTION OF DRINKING WATER**

**Boiling:**

Boil water for two to five minutes. Avoid boiling water with high nitrate or nitrite levels as this concentrates the contaminants (in such situations, use the following chemical treatment process instead).

**Chemical Treatment:**

When boiling is not practical, use common household liquid bleach. Make sure bleach is free of perfumes and added scents.

Read the label for disinfection instructions. If no instructions are on the label, then:

- A). Use 2 drops of liquid bleach per quart of water. Double the amount if water is turbid or colored.
- B). Mix thoroughly and allow water to stand for 30 minutes before using.
- C). Water should have a slight chlorine odor; if not, add one more drop of liquid bleach.

*NOTE: To disinfect larger quantities of water, please see the chart located on the reverse side.*

*During natural disasters, please follow the instructions of your local health authority, state agency or federal agency.*

**FOR MORE INFORMATION ABOUT:**

**Public Water Systems:**

John Calkins  
Drinking Water Section Manager  
Water Quality Division  
(602) 771-4617  
(800) 234-5677 Ext.771-4617  
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**Surface Water & Groundwater Quality Concerns:**

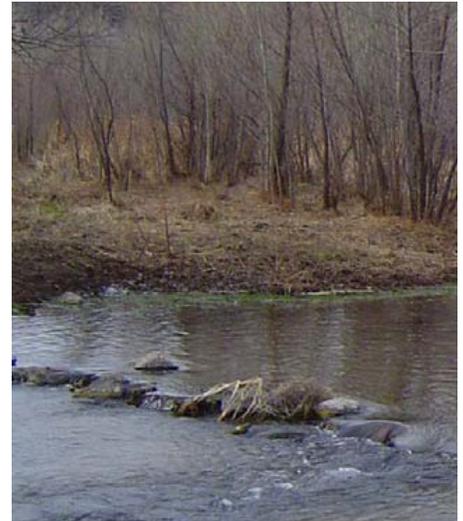
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Hearing impaired persons may call our TDD line at (602) 771-4829.

For more information regarding wild-fire support, visit the ADEQ Web site at: [www.azdeq.gov/function/programs/wildfire.html](http://www.azdeq.gov/function/programs/wildfire.html)

**Private Wells After the Fire brochure**  
<http://www.azdeq.gov/envirom/water/dw/download/privatewells.pdf>

**Emergency Disinfection of Drinking Water chart** <http://www.azdeq.gov/envirom/water/dw/download/disinfec.pdf>



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**ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY DISINFECTION - GENERAL DILUTION GUIDELINES FOR WATER**

Desired Parts Per Million (ppm)	1.0 ppm	5 ppm
<b>Strength of Chlorine Solution</b>	<b>5 %</b>	<b>5 %</b>
50,000 gallons	1 gal.	5 gal.
25,000 gallons	2 qt.	2.5 gal.
10,000 gallons	25.6 oz.	1 gal.
5,000 gallons	12.8 oz.	2 qt.
2,000 gallons	5.12 oz.	25.6 oz.
1,000 gallons	2.56 oz.	12.8 oz.
500 gallons	1.28 oz.	6.4 oz.
200 gallons	0.51 oz.	2.56 oz.
100 gallons	0.26 oz.	1.28 oz.
50 gallons	0.13 oz.	0.6 oz.
25 gallons	0.06 oz.	0.32 oz.
10 gallons	0.3 oz.	0.13 oz.
5 gallons	0.01 oz. (40 drops)	0.06 oz.