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Treatment for microbial contamination may be applied either where the water enters the home (point of entry) or at the point where drinking water is drawn (point of use). Consumers may boil their water or install a point-of-use or point-of-entry water treatment system certified for total microbial (e.g., bacteria, viruses and protozoa) reduction.

If you have a POU or POE treatment system already in place that uses carbon, some other media, or a membrane for the reduction of chemicals or particulate contaminants of concern, be sure to consult the owner's manual or a local water professional to determine how the system should be safely serviced, cleaned and sanitized prior to reuse.

Many home water treatment products, including reverse osmosis systems, do not provide total protection against all types of disease-causing microorganisms that may be present in contaminated drinking water. In many cases, products will be labeled with a statement such as: "Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system." However, there are some water treatment devices that are certified for total microbiological reduction health claims. BWN situations specifically involving microbiological contamination can be adequately handled by these types of microbiologically certified home water treatment devices.

To find products certified for microbial reduction, visit the website of an ANSI-accredited certification body, such as the Water Quality Association ([www.wqa.org/Find-Products](http://www.wqa.org/Find-Products)), NSF International ([www.NSF.org](http://www.NSF.org)), or CSA Group ([www.csagroup.org](http://www.csagroup.org)).

### **Whom should consumers contact for more information?**

If you have questions about why a BWN was issued, you should consult the municipality, water district or regulatory agency that has oversight for the water system. In some cases, the BWN may only apply to specific portions of the distribution system. Knowing the specific circumstances of the BWN will help you in to determine your next actions.

You can search for your public water system using the Safe Drinking Water Information System (SDWIS) at <http://www3.epa.gov/enviro/facts/sdwis/search.html>

To locate a WQA-certified water professional in your area, visit [www.wqa.org/Find-Providers](http://www.wqa.org/Find-Providers).

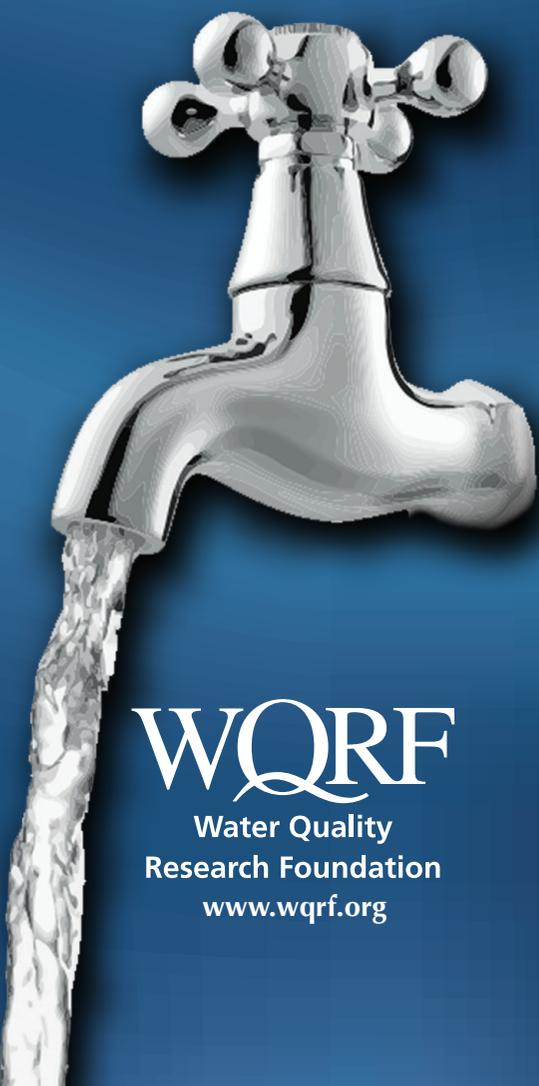
**Acknowledgements:** Thanks to Dr. Kelly Reynolds from the University of Arizona for conducting the research, and to the Association of State Drinking Water Administrators (ASDWA) for their peer review of the research report.

#### Sources/references:

1. Missouri Department of Natural Resources. "Boil Water Orders and Boil Water Advisories," 2011. Available: <http://dnr.mo.gov/env/wpp/boil/>. [Accessed 12 January 2016].
2. CDC, "Drinking Water Advisory Communications Toolbox," Centers for Disease Control and Prevention, 5 3 2013. [Online]. Available: <http://www.cdc.gov/healthywater/emergency/dwa-comm-toolbox/overview.html>. [Accessed 23 February 2015].
3. Reynolds, Kelly A. (2016) "Boil Water Notices in the U.S. 2012-2014." Zuckerman College of Public Health, University of Arizona. Tucson, AZ.
4. EPA on public notification requirements. <http://www.epa.gov/sites/production/files/documents/PNRuleQuickRefGuide.pdf>.
5. Safe Drinking Water Hotline 1-800-426-4791 [water.epa.gov/drink/hotline](http://water.epa.gov/drink/hotline)
6. CDC on preparedness for water emergencies. [http://www.cdc.gov/healthywater/emergency/safe\\_water/community.html](http://www.cdc.gov/healthywater/emergency/safe_water/community.html), and [http://www.cdc.gov/healthywater/emergency/safe\\_water/wells/](http://www.cdc.gov/healthywater/emergency/safe_water/wells/)
7. CDC on which organisms cause the most outbreaks in public water supplies. [http://www.cdc.gov/healthywater/drinking/public/water\\_diseases.html](http://www.cdc.gov/healthywater/drinking/public/water_diseases.html)

## **Boil Water Notices:**

What are they, why are they issued and what are you supposed to do if you receive one?



**WQRF**  
Water Quality  
Research Foundation  
[www.wqrf.org](http://www.wqrf.org)

## What is a Boil Water notice (BWN)?

There are 153,530 public water systems (PWSs) in the U.S. supplying drinking water to customers every day.<sup>1</sup> A Boil Water Notice (BWN), also known as a Boil Water Advisory, is issued by a PWS when there is a known or suspected microbial contaminant in the drinking water distribution system. A BWN may be issued in response to a known event or as a precautionary measure to protect the public in case microbial contaminants are present. The microbes could be viral, bacterial, or protozoan, any of which can cause severe health issues. The notice will instruct consumers to boil all water used for drinking, cooking, food preparation, brushing teeth, and making ice. Proper treatment will make the water safe to consume. Bathing or showering is typically fine as long as no water is accidentally ingested. The most sensitive populations to microbial contaminants include children, the elderly, and those with compromised immune systems.<sup>1</sup>

## How does a BWN differ from a Do Not Drink or Do Not Use notice?

A Do Not Drink or Do Not Use notice may indicate chemical contamination and advises consumers to find alternative drinking water sources because boiling will not make the water safe for these specific contaminants. This type of notice advises consumers to avoid all contact with the water.<sup>2</sup>

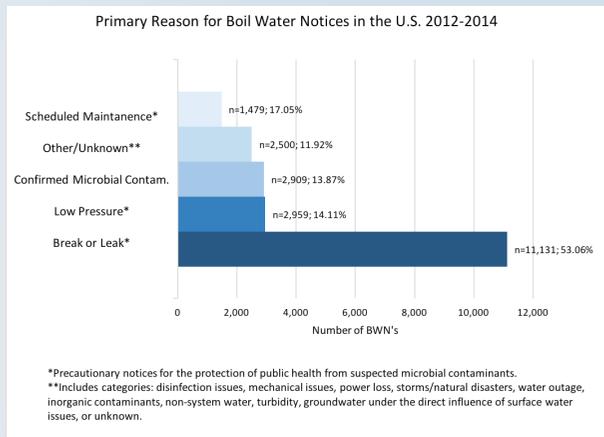
## Why are BWNs issued?

The Water Quality Research Foundation (WQRF) convened researchers at the University of Arizona to track occurrence data from BWNs issued between 2012 to 2014. The results of this study are shown in Figure 1.

Over the study's 3-year period, 20,978 notices were gathered from 50 states. 99.5% were Boil Water notices, 0.5% were Do Not Drink notices, and a very small number of other events were reported as Do Not Use notices.<sup>3</sup>

The majority of notices (53%; 11,131) were presumed precautionary for suspected microbial contaminants due to leaks or breaks in a pipe or water main. The second largest category of BWNs were also presumed precautionary because of low pressure events (14%; 2,959) when the water pressure fell below twenty lbs./inch<sup>2</sup> in any portion of the public supply's water distribution system. The third largest category was from confirmed microbial contaminants, which resulted in 2,909 notices or 14% of the total.

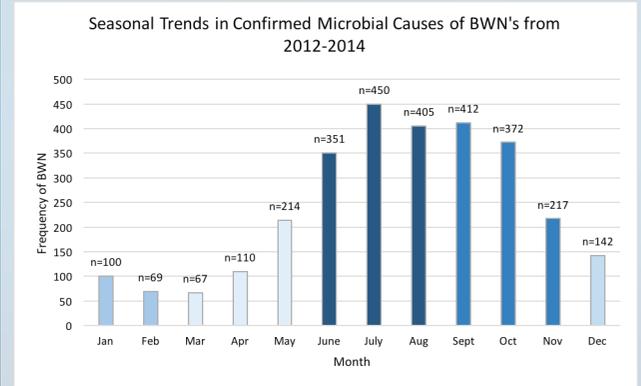
Figure 1: Results of the BWN data collection and categorization by types.



## When are BWNs issued?

Some seasonal trends were observed for BWNs tracked in this study (see figure 2). For confirmed microbial contaminants, the seasonal trends were found to be highly statistically significant.

Figure 2: Confirmed microbial contaminants resulting in a BWN by month.



The author of this report states, "It is our hope that the data presented here can help to identify current—and predict future—vulnerabilities in the municipal drinking water supply so that risk management tools could be utilized to prevent exposures and improve public health. This study also provides information that could be used in risk communication efforts to minimize fears about the water supply, given that many BWN are precautionary or precursors to water improvement strategies."<sup>3</sup>

## How should consumers react upon receiving a BWN?

A Tier 1 event requires customers to be alerted within 24 hours when contamination has been detected or there's an outbreak. A Tier 2 notification must transpire within 30 days of an event, such as when treatment, monitoring, or other routine actions have failed.<sup>4</sup>

Instructions to properly prepare water safe for consumption can be found in the Center for Disease Control's Fact Sheet: *What To Do During a Boil Water Advisory*.<sup>2</sup>

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