

BOIL WATER NOTICES AND ADVISORIES

INTRODUCTION

Customers of public water systems trust and depend on their providers and state officials to ensure that their drinking water is safe and to notify them when there is a problem concerning the safety of the water. The purpose of this document is to provide guidance on how to notify the customers of a public water system when there is a problem with their drinking water supply.

The words “Boil Water” used in the title of this document represents the action to be taken by a customer in the case of microbial contamination. This is the most common type of contamination problem that public water systems experience.

Although microbial contamination is the most common type of contamination problem, it is not the only one. Occasionally public water systems experience chemical contamination of the water supply as a result of a cross connection or a chemical or petroleum spill. During such events, the basic guidelines for notifying the customers are the same; however, the action to be taken will be different. The action to be taken during such events is often for the customer not to use the water for drinking or cooking, and in some cases bathing.

In the past, the South Carolina Department of Health and Environmental Control (Department) and other industry professionals have suggested the use of chlorine bleach as a means of disinfecting small quantities of water for drinking or cooking. However, since such treatment will not kill all parasitic organisms, the Department is no longer endorsing the use of such treatment in lieu of boiling the water.

DEFINITIONS

The difference between a “Boil Water Notice” and a “Boil Water Advisory” depends on the degree of certainty that a water system has been contaminated. The definition for each is as follows:

“Boil Water Notice” means a notice, whether written or verbal (i.e., media), issued by the Department, or the owner or operator of a public water system, notifying the users of the water system that the water is contaminated and to boil the water (vigorous rolling boil for at least one minute) prior to using it for drinking or cooking. The notice shall give the reason for its issuance and corrective actions being taken.

“Boil Water Advisory” means an advisory, whether written or verbal (i.e., media), issued by the Department, or the owner or operator of a public water system, notifying the users of the water system that the water may be contaminated and to boil the water (vigorous

rolling boil for at least one minute) prior to using it for drinking or cooking. The advisory shall give the reason for its issuance and corrective actions being taken.

WHEN TO ISSUE A BOIL WATER NOTICE OR ADVISORY

A “Boil Water Notice” should be issued when sampling indicates that there is a threat to public health. The Department has identified some situations when such a notice is warranted. These situations are as follows:

- Any *E. coli* positive routine sample followed by a total coliform/*E. coli* positive repeat sample OR any total coliform positive routine sample followed by a *E. coli* positive repeat sample. The sampling in this situation has confirmed that pathogenic organisms are in the drinking water.
- If the Department and/or the owner repeatedly collects total coliform and/or *E. coli* positive samples from a well after shock disinfection and the well does not have continuous disinfection treatment. This is an indication that the well may be under the direct influence of surface water.

A “Boil Water Advisory” should be issued when an event has occurred which could have possibly contaminated the drinking water. The following are some situations where a boil water advisory may be warranted:

- Loss of pretreatment at a surface water treatment plant (i.e., no floc) and the untreated water reaches the distribution system. The finished water turbidities in this case may, or may not, be greater than 5 NTU. In this situation, it is likely that microbial contamination has reached the distribution system; however, it will be at least 24 hours before contamination can be confirmed through testing. Therefore, an advisory should be issued immediately.
- Loss of pressure in the entire distribution system or a significant portion of a distribution system.
- A line break where dirt and debris have entered the distribution piping.
- Prior to a hurricane making landfall.
- The use of emergency groundwater sources that have not been sampled or flushed on a regular basis.

Please note that the above situations are not the only times that a boil water notice/advisory should be issued. The Drinking Water and Recreational Water Compliance Section of the Bureau of Water can assist anyone in making a decision to issue a boil water notice/advisory, as well as assist in determining what actions should be taken to correct the problem and when to repeal the alert.

CONTENT AND FORMAT OF A BOIL WATER NOTICE OR ADVISORY

It is very important that a “Boil Water Notice or “Boil Water Advisory” include the following information:

- **Title of the notice/advisory** - The title must include the words “Boil Water Notice” or “Boil Water Advisory”, to whom the notice/advisory is being issued and the date issued.
- **A statement of who is issuing the notice/advisory** - This would be either the Department or the name of the water system. As a general rule, the owner of the water system should issue the notice/advisory, even if it is being issued as a result of sampling conducted by the Department. However, if a notice/advisory is deemed necessary for the protection of public health, and the owner of the water system is unavailable or unwilling to issue the notice/advisory, the Department will take the initiative of issuing the alert. Notices/advisories issued by the Department should only be issued by EQC District Directors or the Director of the Drinking Water and Recreational Water Compliance Section or their designee. In the case of a hurricane or flood, the Department will take the initiative to issue a “Boil Water Advisory” to the affected areas. Such an advisory will also be addressed to private well owners.
- **A statement of what area of the water system the notice/advisory affects** - For example, the entire system, north west portion, southern portion, customers along a specific road, etc.
- **A statement that the residents should vigorously boil their water for at least one full minute prior to drinking or cooking.** In the past, there have been several values used for the length of time that water should be vigorously boiled prior to use. However, the latest information from the Center for Disease Control (CDC) indicates that vigorously boiling water for one full minute is more than adequate to kill any pathogens and make the water safe to drink.
- **An explanation of why the notice/advisory is being given** - This is where the difference in a “Boil Water Notice” and a “Boil Water Advisory” comes into play. In the case of a “Boil Water Notice”, the notice is issued because bacteriological sampling indicates that the drinking water has become contaminated, or there has been a waterborne disease outbreak. In the case of a “Boil Water Advisory”, the advisory is given because there has been an event which could have contaminated the water system, such as a line break, loss of pressure, high turbidity in the finished water, etc.
- **A statement reiterating that the water should be vigorously boiled for at least one full minute prior to drinking or cooking and that any ice made from water that has not been boiled should not be use for drinking purposes.**

- **A statement of what actions are being taken to correct the problem, and by whom.**
- **A statement that customers will be notified when the problem has been resolved and there is no longer a need to boil the water.**
- **Give the name of the office or person and phone number to contact for questions.**
- **Signature of responsible party at the bottom of the notice.**

An example of a notice and advisory is attached for reference.

DISTRIBUTION OF THE NOTICE OR ADVISORY

There are several means by which the notice or advisory may be distributed. If the water system or affected area of a water system is relatively small, a written notice/advisory may be hand delivered to the door of each residence. In addition to the door to door delivery a copy of the notice/advisory should be posted in places normally frequented by the residents, such as post offices, convenience stores, gas stations, etc.

The notice/advisory must never be placed in mail boxes because many of the residents may have already checked their mailbox for the day and thus may not receive the alert until the next day. Also, placing non-mailed items in a mailbox is a federal offense.

If the affected area is large, the notice/advisory should be made by electronic media such as local radio and television stations. In severe cases, such as waterborne disease outbreaks, the local Emergency Preparedness Division should be contacted to aid in getting the message to consumers through the emergency broadcast system.

COMMUNICATION WITH THE DEPARTMENT

The State Primary Drinking Water Regulations require that if a public water system issues a boil water notice or advisory, the Department must be notified immediately. The regulations further require that a copy of the notice/advisory be forwarded to the Department as soon as possible after it is issued.

The regulations also require that a system notify the Department when the boil water notice/advisory is repealed and a copy of the repeal notice forwarded to the Department as soon as possible after it is issued.

Generally, public water systems should coordinate with the Department's District Environmental Quality Control (EQC) offices. EQC District personnel will, in turn, coordinate activities with the Drinking Water and Recreational Water Compliance Section of the Bureau of Water. If the District EQC Office cannot be reached, the system should

then call the Water Supply Permitting and Technical Assistance Division or the Department's 24-hour number.

SUGGESTED ACTIONS TO BE TAKEN FOLLOWING THE ISSUANCE OF A NOTICE/ADVISORY

In the event of a pressure loss to all, or a portion, of the distribution system, intense flushing should begin as soon as pressure is restored. After flushing the affected area, several coliform samples must be taken throughout the affected area to determine if the distribution system is free of any bacteriological contamination. If applicable, chlorine residual measurements should be taken to ensure that there is an adequate disinfectant residual. If possible, chlorine dosages should be increased by 1 to 2 parts per million during this period as a corrective and preventive measure. If the sampling indicates the absence of coliform bacteria, the advisory should be repealed. However, if the sampling indicates the presence of coliform bacteria, additional flushing should be conducted in the area where the positive coliform samples were collected and a second round of coliform samples collected from that area.

If a notice is issued as a result of positive bacteriological sample results, intense flushing and re-sampling (at least two sets of samples taken at least 24 hours apart) of the area should be conducted. Also, if possible, chlorine dosages should be increased as mentioned above. When at least two sets of samples, taken at least 24 hours apart, indicate the absence of coliform bacteria, the notice should be repealed.

The Department will issue a boil water advisory to the potentially affected area prior to any hurricane. Immediately following the hurricane, the public water systems and the Department will evaluate the systems for damage. If a system did not lose pressure and the water quality being pumped to the system was maintained (i.e., low turbidities, adequate chlorine residual) during and after the storm, the advisory should be repealed. However, if the system lost pressure, the same action specified above should be taken.

REPEAL OF A BOIL WATER NOTICE OR ADVISORY

The repeal of any boil water notice or advisory should be distributed in the same manner as it was issued. The repeal of a notice or advisory should include the following information:

- **Title of the notice/advisory** - The title must include the words "Repeal of Boil Water Notice" or "Repeal of Boil Water Advisory", to whom the repeal is being issued and the date issued.
- **A statement of who is issuing the repeal** - This would be the same as who issued the notice or advisory.

- **A statement of what area of the water system the repeal affects** - Generally this will be the same as mentioned in the notice or advisory; however, in certain cases the repeal may only apply to a portion of the area.
- **A statement that the residents no longer need to vigorously boil their water prior to drinking or cooking.**
- **An explanation of why the notice/advisory is being lifted** - Explain what actions have been taken to correct the problem to ensure that the water is safe to drink without boiling.
- **Give the name of the office or person and phone number to contact for questions.**
- **Signature of responsible party at the bottom of the repeal.**

BOIL WATER NOTICE

TO
THE RESIDENTS OF _____
_____ (Date)

The _____ (Utilities/Water System Name) advises the residents of the _____ (Area Location), located in _____ County, to vigorously boil their water for at least one (1) full minute prior to drinking or cooking.

Analyses of recent bacteriological samples collected by the (Utilities/Water System Name) from the drinking water system serving the _____ (Area Location) indicate that the water system has become contaminated. Residents should continue to vigorously boil their water for at least one (1) full minute prior to drinking or cooking until otherwise notified by the _____ (Utilities/Water System Name). Also, any ice made from water which has not been boiled should not be used for drinking purposes.

The _____ (Utilities/Water System Name) is presently working to correct the problem.

If you should have any questions concerning this Notice, you may call the _____ (Utilities/Water System Name) at _____ (Telephone Number).

Owner/System Representative Name

cc: SC DHEC (Local Office)

Repeal of The BOIL WATER NOTICE
TO
THE RESIDENTS OF _____

_____(Date)

The _____(Utilities/Water System Name) advises the residents of the _____(Area Location), located in _____ County, that they no longer need to boil their water prior to drinking or cooking.

Following an intense flushing of the distribution system, bacteriological samples were collected and analyzed by the _____(Utilities/Water System Name). The results of this sampling indicate that the system is now safe to use for drinking and cooking purposes.

If you should have any questions concerning this repeal of the Boil Notice, you may call the _____(Utilities/Water System Name) at _____(Telephone Number).

Owner/System Representative Name

cc: SC DHEC (Local Office)