

A. BOIL WATER ADVISORIES

Boil water advisory (BWA) is intended to prevent the spread of communicable diseases caused by waterborne pathogens. These notices are very serious in nature and should not be issued for trivial reasons. The decision to issue a notice must frequently be made within a relatively short period of time and many times may be based on either incomplete or inconclusive information. Therefore gathering as much information as possible about the circumstances involved, the water system's infrastructure, and communicable disease prevention are essential in evaluating the situation and taking the proper steps to protect public health without unduly alarming the public.

This document is intended to provide guidance to the New Mexico Environment Department's Drinking Water Bureau (NMED-DWB) staff on directing public water systems to issue a notice and eventually rescinding a notice once it is believed that the incident has been adequately resolved.

Microbial contamination is the most common type of contamination problem however; it is not the only one. Since some pathogenic cysts are unaffected by chlorine, unless the source of contamination is known to not include such cysts, the presumption should be made these cysts are present and that only boiling the water will be effective in making it safe for consumption.

Public water system officials should be encouraged to seek advice from the NMED-DWB if in doubt about a potential contamination incident of their drinking water.

B. CAUSES OF BOIL WATER ADVISORIES

Boil water notices are issued for two principal reasons with the difference between the two based on what evidence is available that the water is contaminated.

- a. **Precautionary Boil Water Notice** – should be issued by the public water system when a presumption is made that the water may be contaminated and the notice is for precautionary reasons. Instances where such a notice can be warranted include:
 - i. **Loss of distribution pressure.** For the purposes of this document, pressure loss is defined as distribution pressures less than 20 psi. Loss of distribution pressure due to main breaks, power failures, equipment failure, etc. for a sustained period of time or over a wide area. The criteria to avoid a boil water advisory for a pressure loss are outlined later in this guidance.
 - ii. **Treatment process failure/interruption.** Persistent failure or significant interruption of key water treatment processes such as loss of one or more treatment barriers or turbidity spike in the effluent quality.
 - iii. **Surface Water Treatment Rule treatment techniques violations.** Persistent failure to meet Surface Water Treatment Rule treatment techniques such as turbidity, CT or effluent disinfection requirements.
 - iv. **Contamination.** An unusual and significant challenge to a drinking water source from a spill, discharge, natural occurrence, or other circumstance occurs.

- b. For some circumstances, the following should to be taken into account.
 - i. Vulnerability of the source to contamination: whether the source water supply or its watershed has significant upstream sewage or storm sewer discharges and the degree of treatment of those discharges, confined animal operations, livestock operations (cattle and dairy farms), heavy recreational use, or any other activity which could contribute significant pathogens to the source water.
 - ii. Treatment effectiveness and operational history: the unit processes employed in treating the water and whether they are properly operating, the water quality record of the plant, the skill level of those operating the plant, and knowledge of past similar occurrences.

C. **Contaminated Boil Water Notice** – should be issued by public water system when the presumption is made that the water is contaminated based on supporting operational, water quality, or epidemiological evidence. Instances where this type of notice is warranted include:

- a. **Acute maximum contaminant violations** of the Total Coliform Rule or confirmed presence of E. coli in compliance or special samples.
- b. **Persistent presence of Total coliform** in compliance or special samples.
- c. **A cross-connection incident** involving a microbiological contaminant.
- d. **Evidence of a disease outbreak** where available data suggests drinking water may be the source.
- e. **Natural disasters** (floods, tornado, earthquake, etc.) likely to have adversely affected water quality in the treatment plant or distribution system other than a loss of pressure.
- f. **Positive tests for pathogens** when consideration is given to the source and timeliness of the analyses, appropriateness of the collection and test methods utilized, and the limitation of the test method and results.

In all cases, if there are violations or situations at the public water system with significant potential to have serious adverse effects on human health as a result of short term exposure, as determined by the NMED-DWB and the water system is unable or refuses to issue a BWA, the NMED-DWB shall issue the advisory on behalf of the water system. If the NMED-DWB is required to take steps to issue the Boil Water Advisory on behalf of the water system due to a refusal of the water system to issue the advisory on its own, a Notice of Violation (NOV) may be issued to the Public water system as per 40 CFR 141.202. The Department at its discretion may proceed with escalated enforcement action(s) including issuance of Administrative Order(s) with possible penalties assessed against the water system for refusal to issue a boil water advisory.

c. **Format**

- i. Public Water Systems should issue BWAs on their own authority. The issuance of a BWA by a public water system carries with it the implicit approval by the NMED-DWB. NMED-DWB shall be notified as soon as practical, but no later than 24 hours of any emergency condition and the issuance of a BWA by a water system.

- ii. The Public Water System shall provide a copy of the advisory to the NMED-DWB. The NMED-DWB will confirm the BWA and provide notice to the state news service through a press release.
- iii. All notices should contain, at a minimum, the following information:
 - 1. Title of the notice;
 - 2. Name of the public water system;
 - 3. Who is issuing the notice;
 - 4. Date of the BWA;
 - 5. Geographical area affected;
 - 6. Reason for the notice and whether the water may be contaminated (precautionary notice) or is presumed to be contaminated (contaminated water notice);
 - 7. The corrective action required by the customer; and
 - 8. The name and phone number of a person to contact for questions.

d. Distribution

- ii. Prompt notification to customers of a BWA is critical if the notice is to be effective. A written notice to the individual customer is the most effective means of notification.
- iii. Distribution of the BWAs should be conducted in the manner(s) required by 40 CFR 141.202(c)
- iv. Door hangers, phone calls, and posted notices in frequented places such as post offices, convenience stores, etc. work well. Notices should not be placed in a mailbox since the occupant may not see it for a day or more.
- v. If the area impacted is large, a notice should be provided to the electronic and print media - radio, TV, and newspapers.
- vi. If the event demonstrates evidence of a disease outbreak, any notice should be coordinated with the NMED-DWB.

e. Corrective Action

- vii. For the customer's part, the principal action will be to boil the water. Water used for drinking and cooking should be heated to a rolling boil for at least five minutes. Ice cubes formed in the time period for which the boil notice is in

effect should be discarded and only boiled water used for making ice. Water used for bathing should not be a problem; however, small children should be supervised to ensure that they don't ingest the water. In addition to or in lieu of boiling the water, the customer may want to utilize bottled water from a reputable source.

- viii. For water systems, common corrective measures for boil notices due to distribution problems include establishing and maintaining higher chlorine residuals, flushing of lines and varying tank levels to eliminate stagnant water, and conducting a cross-connection survey. For BWAs due to a treatment failure, corrective measures include optimizing all treatment processes, establishing and maintaining higher chlorine levels, collection of microbiological samples during and following the treatment failure, and the use of alternate approved

sources of water. Proactively employing these measures, if, for example, it is known that a turbidity spike will occur, may be a mitigating factor in the decision to issue a boil notice.

- ix. The required corrective measures will be dependent on the particular reason for the BWA and must be determined on a case- by-case basis.

f. Rescind Boil Water Notice

- x. In order to rescind a BWA, the principal incident or reason for the issuance of the notice must have been corrected. This could require onsite verification by NMED-DWB personnel. Additionally, microbiological samples taken on two separate (preferably consecutive) days from the affected area must be coliform absent, except for notices issued for a pressure loss. In those cases, a single set of microbiological samples from the affected area must be coliform absent.
- xi. The number of samples, per day, must be sufficient to be representative of the affected area with the minimum number as outlined in Table 1

TABLE 1

Number of Samples Sufficient to be Representative		
Number of Services Affected	Population Affected	Minimum Number of Samples
1 – 50	≤ 125	1
51 – 100	126 – 250	2
101 – 500	251 – 1,250	3
501 – 1,000	1,251 – 2,500	4
1,001 – 2,000	2,501 – 5,000	5
> 2,000	> 5,000	Number Required by Total Coliform Rule

If the boil advisory is due to a main break or repair, a cross connection, or a treatment failure, at least one of the samples must be taken in the immediate vicinity of the repair, cross-connection, or from the treatment plant effluent. If a BWA has not been issued and a microbiological sample is *E.coli* positive, the NMED-DWB is to be notified immediately or a BWA issued. If total coliform positive, collect repeat samples and obtain two consecutive sets of samples which are coliform absent.

The information contained in the Boil Water Rescind Notice is to be similar to that of the original notice:

1. Title of the repeal notice;
2. Name of the public water system;
3. Who is issuing the repeal notice;
4. Date of the BWA;
5. Geographical area affected
6. Explanation that action (boiling) is no longer required by the customer;
7. Why the notice is being lifted (i.e., the correction of the deficiency originating the notice and the results of microbiological samples); and
8. The name and phone number of a person to contact for questions.

The manner of distribution is to be the same as the original boil notice.

g. **Avoiding a Boil Water Notice Due to a Loss of Distribution Pressure**

In order to avoid issuing a BWA due to a loss of distribution pressure, the following criteria must be properly documented and met.

- i. **Water System Disinfects.** The water system is one that is listed in SDWIS as a system that uses continuous disinfection and has the ability to increase the chlorine levels during the pressure loss event.
- ii. **Limited area.** The public water system knows exactly the areas affected, the area is manageable from both a size and number of customer's standpoint, not more than 150 connections, and representative microbiological samples can be collected from the affected area immediately after the resumption of service.
- iii. **Time with pressure loss is limited.** The time for zero pressure is limited to less than 2 hours and the same area is not subject to outages multiple times on the same day or on consecutive days.
- iv. **Cross-connections, Backflow or backsiphonage.** There were no known cross-connections or backflow or backsiphonage in the affected area.
- v. **Proper Disinfection and Flushing.** Water system must properly disinfect and flush the affected area prior to restoring full service to customer. This includes all recommended AWWA Standards for line disinfection. A chlorine residual of at least 0.2 mg/L in the affected area must be able to be restored within 30 minutes of restoring water service.
- vi. **Microbiological samples.** Representative Microbiological samples are collected from the affected area immediately upon service being restored. If sample results are coliform positive, the water system should immediately issue a boil water advisory and notify the NMED-DWB.

If a water outage or pressure loss occur as a result of scheduled maintenance a BWA is not required as long as the public water system properly conducts and documents the following items:

1. Prior notice to affected customers should be made by the most practical method
2. Special microbiological samples can be collected from the affected area immediately after service has been restored.
3. Pressure loss is limited to less than 2 hours.
4. PWS properly disinfects the affected water line(s) according to the most current AWWA Standards prior to restoring service to the affected area
5. PWS properly flushes the affected water line(s) in order to remove all sediment and super chlorinated water from the line(s)
6. Microbiological samples are negative for E.coli.