Waterborne Disease and Boil Water Notices

Waterborne Disease Outbreaks (WBDO's) occur when drinking water becomes contaminated by microbial pathogens or chemicals. Typically, WBDO's are caused by microbial pathogens, such as bacteria, viruses, or protozoans. These pathogenic organisms are transmitted via the fecal-oral route. This means that the drinking water supply has somehow been contaminated by fecal material from humans or other warm-blooded mammals. The most important test used to determine if drinking water has been contaminated by disease-causing organisms, is the total/fecal coliform bacteria test. Coliform bacteria are present in the intestinal tracts of all warm-blooded mammals, and are therefore good indicators of fecal contamination. If coliform are found in a water sample, it is possible that pathogenic organisms could also be present. It is important for public water systems to protect their source water from possible contamination sources, maintain treatment systems, including filtration and chlorination, and to routinely test the finished water for total/fecal coliform bacteria. If total coliform bacteria are detected in a sample, the PWS is required to conduct increased sampling to determine the extent and possible cause of contamination. If fecal coliform are detected, it is called an "acute" violation and the system will be put on Boil Water Notice.

The May 2000 WBDO in Walkerton, Ontario, illustrates the need for operators, public utility managers and state drinking water officials to remain vigilant at all times. In this outbreak, the public water supply was contaminated by the bacteria *E. coli serotype* 0157:H7. This pathogenic strain of *E. coli* causes severe diarrhea and in some cases, kidney failure. Thousands of people may have been infected in Walkerton and fourteen deaths are under investigation as a result of this outbreak. While the investigation into the cause of this WBDO is still in progress, it appears that proper response to positive coliform tests could have reduced the harm. This case illustrates the importance of reporting all positive coliform tests to the ADEC immediately and the necessity for ADEC staff to take immediate action by issuing BWN's, requiring additional samples, and requiring the water system to investigate possible causes of contamination.

By routinely testing for coliform and responding immediately to positive coliform tests, we can greatly reduce the probability of a WBDO occurring in an Alaskan Public Water System. By working together, we can help to ensure the safety of the drinking water in our communities.

Northern Flows

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Lead and Copper Rule Minor Revisions

EPA has made minor changes to the Lead and Copper Rule (LCR) that was first published in 1991. The revisions to the LCR, referred to as the Lead and Copper Rule Minor Revisions, or LCRMR, were published in the Federal Register on January 12, 2000 and took effect on April 11, 2000. The LCRMR does not change action levels, nor does it affect the Rule's basic requirements to optimize corrosion control and, if appropriate, treat source water, and deliver public education if the lead action level has been exceeded. It may however, **reduce** your monitoring, reporting, and public education. As required by the LCR, all Class "A" public water systems should have completed their initial lead and copper tap water monitoring by now. Those systems whose 90th percentile levels do not exceed the action levels of 0.015 milligrams per liter (mg/l) for lead and 1.3 mg/l for copper, must continue to monitor for lead and copper at the tap, but less often. Any system that has exceeded either the lead or copper action level must install corrosion control treatment.

There are two categories of revisions in the LCRMR: revisions that you must begin complying with now, and revisions that you cannot implement until the Alaska Department of Environmental Conservation (ADEC) adopts and implements them. ADEC will keep you informed as these revisions are adopted.

The revisions that you must begin to comply with <u>now</u> are as follows:

If you have installed corrosion control treatment but are not required to conduct water quality parameter monitoring, you must continue to properly operate and maintain corrosion control treatment at all times. (This is not a new requirement; rather, it clarifies the LCR requirement.)

If you do not have enough Tier 1, 2, or 3 sites to collect the required number of samples, you must collect samples from other sites served by your system that are representative of plumbing typically used in your community.

If you monitor lead and copper less frequently than every 6 months (reduced monitoring), you must:

- collect from sites that are representative of the ones you used during initial monitoring, and
- notify ADEC in writing no later than 60 days after changing treatment or adding a new source.

If you are required to issue public education because of a lead action level exceedance, you must submit a letter to ADEC within 10 days of the public education, documenting that you have completed the public education. (The letter is not a new requirement, however the time frame to submit the letter has been modified.)

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Revisions that ADEC is considering adopting are as follows (You are not required, nor allowed to implement these without ADEC approval):

1. New procedures for determining whether you comply with your optimal water quality parameters (WQP) may be established.

2. Systems on reduced monitoring may collect samples during months other than June to September, if lead levels are higher during those months.

3. Systems that operate 24 hours a day may collect samples that have stood in the taps for less than six hours, if they do not have enough taps that can supply first-draw samples (i.e., samples that have stood in the tap for greater than six hours). In such cases, samples must stand in the taps as close to six hours as possible, prior to collecting the samples.

4. Systems may conduct tap water monitoring once every 3 years if the system's 90th percentile levels are 0.005 mg/l for lead and 0.65 mg/l for copper for 2 consecutive, 6-month monitoring periods. This is known as accelerated reduced monitoring.

5. Systems may proceed to triennial WQP tap monitoring if the system also qualifies for accelerated reduced monitoring of lead and copper tap water and complies with its optimal WQPs for 2 consecutive monitoring periods.

6. ADEC can invalidate lead and copper tap water samples that meet certain specified criteria.

7. Systems that have very low lead and/or copper levels (0.005 mg/l for lead and 0.65 mg/l for copper), meet very strict drinking water plumbing material criteria, and serve 3,300 persons or fewer may request a 9-year monitoring waiver for lead and/or copper tap monitoring. Plumbing material criteria requirements include: having no copper pipes or service lines; no plastic pipes or service lines that contain lead plasticizers; and no brass faucets, unless they satisfy certain specified criteria.

8. Ground water systems may limit biweekly WQP entry point monitoring, if certain criteria are met.

9. Systems may conduct source water monitoring on a reduced schedule even if an action level is exceeded, if certain criteria are met.

10. Reporting revisions regarding 90th percentile lead and copper levels, certifications of sampling procedures, and reduced monitoring.

11. Content and distribution changes in lead public education.

If you have questions regarding requirements of the LCRMR, please contact EPA's Safe Drinking Water Hotline: 1-800-426-4791.

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