



Public Health Department

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Environmental Health

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WELL DISINFECTION AND SAMPLING INFORMATION

Issue of Concern

Construction activities, electrical outage, high water demand resulting in low or negative water pressure, unscreened vents, and a variety of other factors can allow environmental contaminants to be drawn into a water system and result in presence of total and fecal coliform bacteria.

Owners of individual wells need to be aware of precautionary measures and how to disinfect and have their well water tested by a certified laboratory after their water system loses pressure.

Public water systems have operators that monitor water systems for factors that could result in contamination of the drinking water and are often equipped with backup generators to assure adequate water pressure is maintained during power outages. When total or fecal coliform are detected during required routine water testing, the water system operators notify users that they should take precautionary measures, as described in the next section of this information sheet, until the system has been disinfected and tested to assure it is free from bacterial contamination.

Homeowners with individual wells also need to be aware of these measures and have a basic understanding of how to disinfect their wells and test the water for total and fecal coliform bacteria.

Precautionary Measures

One or more of the following precautionary measures are recommended by the Public Health Department to assure unsafe water is not consumed prior to disinfection of a well:

- Use only bottled water for drinking and cooking;
- Boil tap water for one full minute;
- Add fresh, unscented liquid household bleach to tap water at a rate of 8 drops or $\frac{1}{4}$ teaspoon per gallon of clear water or 16 drops or $\frac{1}{2}$ teaspoon per gallon of water if it is cloudy; the treated water should be mixed thoroughly and allowed to stand for 30 minutes before using; a chlorine-like taste and odor will result from this process;
- Use purification tablets, following the manufacturer's instructions indicated on the packaging.



Well Disinfection

To disinfect a well, chlorine is added at the water source and then allowed to flow throughout the distribution system. After enough time has passed to allow the chlorine to kill all bacteria in the system, the system is purged of chlorinated water and tested.

The disinfection procedure is handled by the system operator of community water systems. Homeowners with individual wells may either contact a commercial well drilling service or use the following procedure:

1. Notify all users of the water system that you plan to disinfect the well and that they should not use the water until you have notified them that the disinfection process is complete;
2. Pour 2 gallons of unscented, liquid household chlorine bleach into the well casing (not the water pipe);
3. Turn the pump on and off several times to mix (“surge”) the solution in the well;
4. If possible, circulate chlorine-containing water from the well directly back into the well through a clean hose for 3-4 hours; this will provide an even mixture of the chlorine solution and will wash down the casing and drop pipe;
5. Turn on pump and operate the well until you can detect an odor of chlorine from running water at a tap near the well;
6. Open and run each individual cold water tap throughout the system until you can detect an odor of chlorine or there is a positive chlorine test; then close the tap;
7. Turn the pump off and allow water system to stand for 12 hours or overnight;
8. Flush the well through outdoor taps, away from trees, lawns, and gardens until each tap produces no odor; flush residual chlorine from indoor taps;
9. Use swimming pool chlorine test and follow kit test instructions to be sure NO chlorine remains in the water;
10. Have the water tested for coliform bacteria; if the test shows *presence* of coliform, contact a commercial well drilling service for the Public Health Department as shown at the end of this informational sheet; if the test shows *absence* of coliform bacteria, another sample should be taken at least 5 days after the initial test.



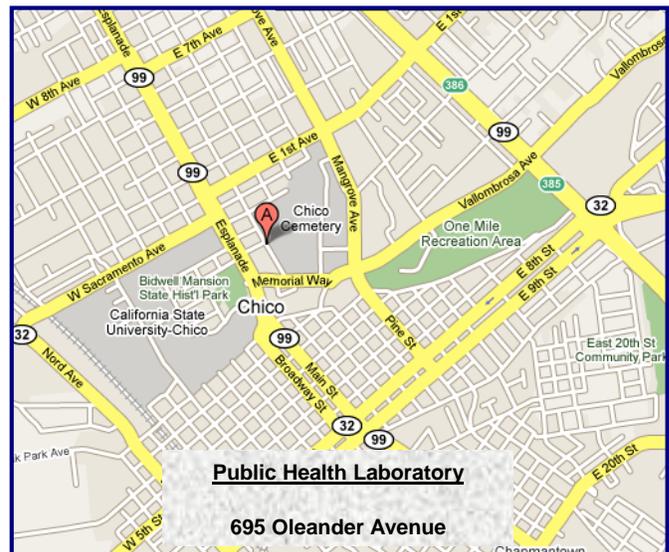
Coliform Sampling

After the well has been disinfected and adequately purged of the chlorinated water, the well water needs to be sampled to assure that bacteria are no longer present. The Public Health Laboratory tests for the presence or absence of coliform bacteria. Coliform bacteria are indicators of potential contamination of a water supply and may originate from human, animal, or soil sources. If coliform bacteria are present, drinking the water may not necessarily result in illness, but that possibility does exist.

In private water wells common causes for coliform bacteria contamination include improper well surface seal and well maintenance activities not followed by disinfection. Proper sealing of the well and disinfection should be performed to ensure a safe water supply and to verify that there are no other sources of contamination that need investigation.

It is important that well water be sampled correctly in order to get accurate results. Special care must be taken to assure that bacteria are not introduced into the sample when it is taken:

- Only sterile bottles obtained from the Public Health Laboratory at Oleander Avenue in Chico or from the Public Health Department office at 202 Mira Loma Drive in Oroville can be used; do not pre-rinse the bottle;
- Check that the well is tightly sealed to prevent the entrance of any surface contamination, either solid or liquid, to the water supply; vents should be screened, opening downward and above flooding; if the well is not sealed, take measures to have it sealed properly but allow for chlorine to be added to well now and in the future;
- Collect the sample from an outlet tap as close to the well as possible; the valve stem of the hose bib should not be leaking and the should not be rusty or corroded; if a faucet is chosen inside the house the aeration screen, if present, needs to be removed from the end of the faucet;





Well Disinfection and Sampling Information

Page 4 of 4

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Butte County Public Health Laboratory
 695 Oleander Avenue
 Chico, CA 95926
 530-891-2747
 Greg Costo, Laboratory Director

WATER REPORT

Laboratory Number _____ Date & Time Received _____
 Last First

Name _____
 Address _____
 City _____
 State CA _____

Telephone Number _____
 Fax Number _____
 Date Collected _____
 Time Collected _____
 Collected By _____
 What was the actual sample collection point? _____
 Additional information _____

TEST RESULT BY "COLLERT" TEST METHOD

Coliforms Absent Present E. coli Absent Present

Date Reported _____ By _____

Method of Contacting Client Mail Fax Telephone Environmental Health 8/21/08

- The water should be turned on and allowed to run full strength for 5 minutes; then adjust the water flow so that the sample bottle can be filled without splashing, but not so slow that the water curls back over the outlet of the hose bib;
- Remove the bottle's lid, fill the bottle to the line on the bottle's neck, and recap the bottle without touching the inside of the lid or bottle; Don't over or under fill the bottle or the sample might have to be rejected by the laboratory;
- Complete the laboratory's water report;
- Transport water samples immediately to the laboratory, or refrigerate and submit to the laboratory less than 24 hours from the time the sample was taken.

Laboratory Information

Water samples cost \$24 at the Public Health Laboratory. The laboratory accepts water samples on Monday through Thursday, 8 a.m. – 4 p.m. The test identifies the presence or absence of total and fecal coliform and results are available within 24 hours.

Questions?

Residents seeking more information about the status of water in their area should call:

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Division of Environmental Health
 202 Mira Loma Drive
 Oroville CA 95965
 (530) 538-7281