

BUTTE COUNTY
PUBLIC HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION

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Well Disinfection and Sampling Information

- June 17, 2008 -

Butte County Public Health officials want to warn residents returning to their homes about possible water contamination as a result of the recent fires.

Issue of Concern

Electrical outage and/or high water demand can result in low or negative water pressure and allow environmental contaminants to be drawn into the water system.

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 pressure and often have backup generators to assure adequate water pressure is maintained. When adequate pressure is not maintained, 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.

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);



4. Turn the pump on and off several times to mix ("surge") the solution in the well;
5. 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;
6. Turn on pump and operate the well until you can detect an odor of chlorine from running water at a tap near the well;
7. 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;
8. Turn the pump off and allow water system to stand for 12 hours or overnight;
9. Flush the well through outdoor taps, away from trees, lawns, and gardens until each tap produces no odor; flush residual chlorine from indoor taps;
10. Use swimming pool chlorine test and follow kit test instructions to be sure NO chlorine remains in the water;
11. 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.

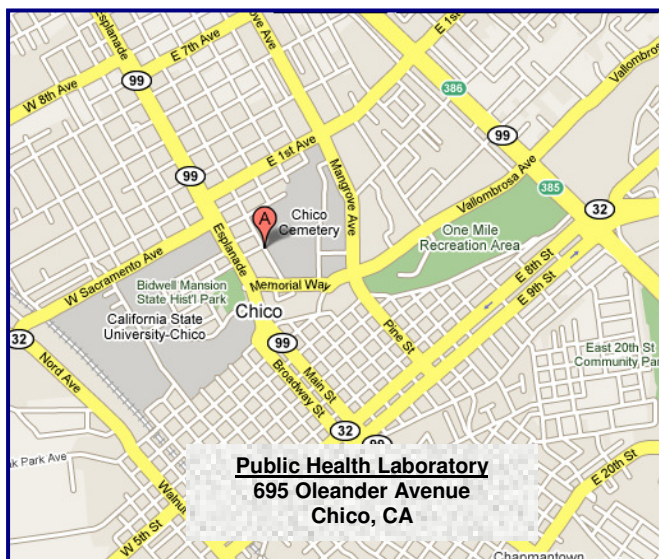
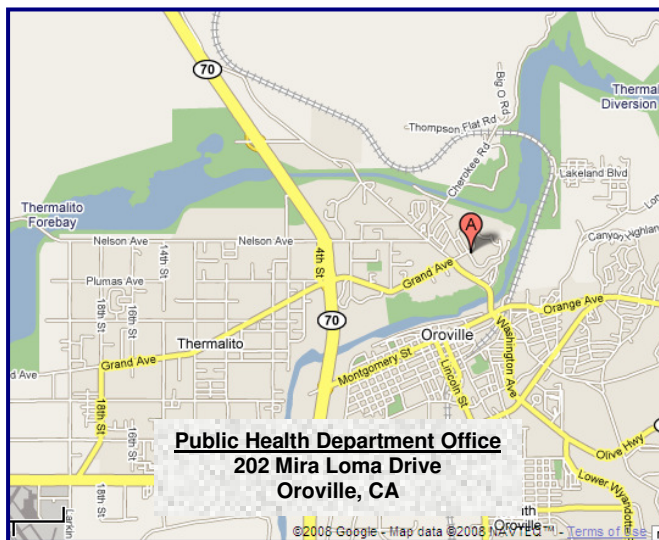
Coliform Sampling

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.

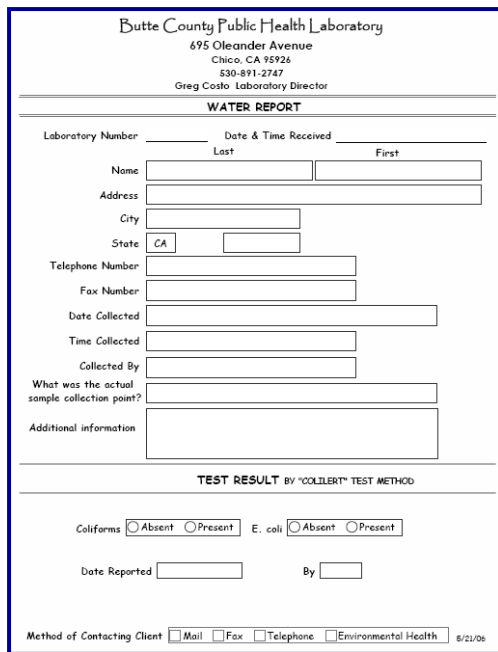
In private water wells common causes for coliform bacteria contamination include improper well surface seal and well maintenance without disinfection. Proper sealing of the well and disinfection should be performed to ensure a safe water supply and to verify that there are no other sources of contamination 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 a 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;
- 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



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 "COLILERT" TEST METHOD

Coliforms Absent Present E. coli Absent Present

Date Reported _____ By _____

Method of Contacting Client Mail Fax Telephone Environmental Health 8/21/06

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 \$15 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 Public Health's Environmental Health Division at 538-7281.