



**Monterey County Health Department  
Consolidated Environmental Laboratory**  
1270 Natividad Rd., Rm. 118  
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(831) 755-4516

### **TESTING FOR TOTAL COLIFORMS AND *E. COLI***

**PURPOSE:** Outbreaks of enteric (intestinal) and opportunistic diseases caused by waterborne microorganisms still occur even in the most advanced nations with superior sanitation practices and sophisticated treatment and testing programs. Waterborne diseases include dysentery, hepatitis, cholera, cryptosporidiosis, and giardiasis. These diseases are spread by water contaminated with fecal material from humans and other warm-blooded animals.

It is not feasible to routinely test drinking water for every possible disease-causing microorganism. Instead, water quality standards are based on the concept of "indicator" organisms. According to this concept, drinking water is tested for organisms that are not necessarily the cause of disease, but are associated with contaminated water and indicate the potential for disease transmission. The most commonly used indicator organisms for drinking water are total **coliforms** and *E. coli*.

The **total coliform** group is the broadest indicator classification and includes bacteria found in soil and vegetation as well as the intestinal tract of warm-blooded animals; *E. coli* is a specific type of coliform bacteria, which originates from the intestinal tract of warm-blooded animals.

**SAMPLE COLLECTION:** Water samples taken for coliform bacteria testing must be collected and handled carefully to ensure that the sample taken truly represents the bacteriological quality of water in the system. The following procedures will help you in this regard:

1. Sterile containers provided by your laboratory must be used. Do not touch or otherwise contaminate the inside of the container, the inside of the cap, or the threads of the container. The container contains a chemical to neutralize chlorine; do not rinse the container.
2. Select a faucet that is used frequently. Do not take a sample from a faucet that is leaking around the handle. Do not take a sample from a dirty faucet or one that is equipped with an aerator and/or screen. Also, do not take a sample from a swing type faucet. Never take a sample from a hose or other device that is attached to the faucet - - - remove them first.
3. When you have found a suitable faucet, open it just enough to produce a flow which can be collected without splashing. Let it run for two or three minutes. Carefully fill the container up to the 100ml mark. Immediately replace the cap (tightly), and label the sample with well identification, description of sample point, date and time of collection, and name of sample collector.
4. Refrigerate the sample and/or place the sample in a cooler with sufficient ice until it can be delivered to the laboratory. It is recommended that samples arrive at the laboratory below 10 °C if received more than 2 hours after collection.
5. Complete the laboratory form including mailing address, name of sample collector, well number, description of sample point, date and time of collection, and test ordered (i.e. "Coliform").

## CARE OF SAMPLE

SAMPLES MUST BE SUBMITTED DIRECTLY TO THE LABORATORY WITHIN 24 HOURS OF COLLECTION. Alternatively, the sample can be submitted on the same day of collection to one of the following health department offices:

Monterey Co. Environmental Health  
1200 Aguajito Rd.  
Monterey, CA  
831-647-7654

Monterey Co. Environmental Health  
200 Broadway St. Suite 70  
King City, CA  
831-386-6899

Monterey - Drop off by 9:00 a.m.

King City – Drop off by 9:00 a.m.

REMEMBER: SAMPLES SHOULD BE COOLED AFTER COLLECTION UNTIL RECEIVED AT THE LABORATORY (e.g. iced cooler).

Health department offices can provide for cold storage/transport from point of receipt.

## FEE FOR TESTING

The fee for coliform testing is \$25. If you do not have an account with our laboratory, you must pay in advance for this testing. Clients who have an account will be billed at the end of the month for which results are reported.

## INTERPRETATION OF RESULTS

Coliforms other than the fecal group are ubiquitous and careful maintenance of the water system and collection of samples is necessary to avoid contamination. State and federal drinking water standards allow **total coliforms** to be present in up to 5% of samples tested by large water systems each month; however, small drinking water systems which test fewer than 20 samples per month should have no **total coliform** positive samples/month. *E. coli* should never be found in drinking water; if *E. coli* is present, it represents an urgent health threat and the water should be considered non-potable until properly treated.

*Note to small water systems permitted by Monterey County:* If total coliforms are detected in a routine sample, four additional samples should be immediately collected for testing; one from the source water (well or storage tank), one from the original site where total coliforms were detected, and two samples from the distribution system (including one upstream and one downstream). If *E. coli* is detected in a routine sample, immediately contact Monterey County Environmental Health (755-4507).