

Drinking Water Collection for Bacteria Testing

Intro

Collecting a water sample is not as simple as turning the faucet on and filling the sample container. Read the instructions to familiarize yourself with each step or you may inadvertently sabotage your own results by improper sampling. The quality and reliability of the results can be greatly affected by the manner in which the sample is taken. Since water samples are easily contaminated, proper sampling protocols are essential to ensuring accurate results.

Step 1 – Preparation:

1. The Laboratory will provide your collection container. No other containers will be accepted.
2. It is important to keep it free from contamination. If the sample container is accidentally contaminated, please discard and pick up a new container prior to collection.
3. Never rinse the sample container before collecting the sample. The white powder inside the sample containers are necessary and must remain in the container.
4. Wear latex gloves when collecting samples. If gloves are not available, then wash the hands as thoroughly as possible with soap and hot water. This will decrease the opportunity of external bacterial contamination.
5. Obtain water-resistant marker or pen for labeling your sample.

Step 2 - Find the proper location:

1. Use a faucet which does not leak. Avoid rubber hoses, fire hydrants, and visually soiled/dirty areas. Remember to take only one sample per location.
2. Remove any devices that are attached to the faucet, which includes aerators, screens, strainers, hoses and purification devices. These devices can harbor bacteria which can contaminate your sample.
3. To accurately capture a good representation of the water quality, open tap fully and let the water run for 3 minutes to clear the line.
4. Turn off the water and disinfect faucet with bleach or alcohol. Do not flame the faucet. Flaming can leave carbon deposit on the inside of the faucet, which is a food source for certain bacteria and may interfere with the test reading.
5. Open tap fully and let water run for 3 to 5 minutes to rinse any foreign material that may have been dislodged and to ensure no residual chlorine remains from the bleach.
6. To prevent splashing when acquiring a sample, adjust the water flow to produce a slow steady stream.

Step 3 - Sample carefully:

Important Tips – Do not breathe in the direction of the sample or touch the inside of the sample container. Do not touch the inner surface of the cap. Hold the cap with the inside facing down. Hold the container in one hand while removing the cap with the other.

1. Fill the sample container to its shoulder.
2. Leave 1 inch of air space from the top to facilitate mixing.
3. Replace the cap immediately and securely to prevent contamination and leakage.
4. Place the sample in ice immediately after collection.

5. Label your sample with the site, date/time of collection that correlates with the information on your submission form.

Step 4 - Ice it down:

Important Tips – Under no circumstances should the sample be allowed to freeze or subjected to extreme heat. This will kill any bacteria and give a false reading.

1. If you plan to submit a water sample to the laboratory within 1 to 3 hours of collection follow this procedure:
 - a. Have enough ice at the collection site to completely submerge the sample container(s)
 - b. Immediately cover entire container(s) with ice following each collection. Do not lay container(s) on top of the ice; it will not get cold enough.
 - c. Our studies show that by completely covering sample container in ice, the sample will reach the required refrigeration temperature within an hour.
2. If you plan to submit water sample to the laboratory later than 3 hours after sample collection, follow this procedure:
 - a. The only difference between the two procedures is that the sample can be stored in a refrigerator following collection.
 - b. Follow same procedure as listed above
 - c. Again, our studies show that by completely covering sample container in ice, the sample will reach the required acceptance temperature within an hour.

Step 5 - Get it to the lab in a hurry:

1. Fill out the Sample Submission forms for a single collection or multiple collections.
2. Fill out your portion of the form completely and be sure to use your public water system's I.D. number, if you have one. - **(Mandatory for all Public Water Systems)**.
3. If you do not have a system I.D. number, indicate the County in which the sample was taken.
4. If you chlorinate, record your chlorine residual- **(Mandatory for all Public Water Systems)**.
5. Read the bottom portion of the form and make sure the lab has no reason to reject your sample before analysis.
6. The sample must arrive in ice or it will be rejected. Transport the sample in a cooler or insulated container.
7. Submit the sample as soon as possible. The lab must receive the sample in less than 30 hours from the time of collection.
8. All mailed samples are required to be shipped overnight and with enough ice packs to ensure that it is still cool when it arrives at the lab.

Samples are accepted on Monday through Thursday preferably before 3:30 pm. Please contact the laboratory directly to coordinate sample delivery after 3:30 pm.

The laboratory is closed on all City of San Antonio holidays. Samples are not accepted two days before the holiday. To verify holiday closings, please call the lab at 210-207-8887.

Step 6 – Results:

You may call for a verbal result after **24 hours**. To inquire about your sample, have the submitter Name and the submission date available.

The lab will then mail, e-mail, or Fax your report to you on the form you completed based on the preference you selected. Test for total coliforms and E. coli will be performed. Key words in the report are:

Total Coliform: Present or Absent

Escherichia coli: Present or Absent

A **positive report** indicates that Total Coliform organisms and/or E. coli have been found, which means the water may be unsafe and the system needs to be disinfected.

A **negative report** indicates that Total Coliform organisms and E. coli have not been found. This means the water is bacterially suitable for consumption but does not characterize other constituents that may be present in drinking water.

UNSUITABLE FOR ANALYSIS - If you carefully follow the guidelines for proper sampling, you can avoid most reasons for an unsuitable sample.

If your report form is positive for coliform organisms, you should treat your system with chlorine bleach, and then submit another sample for analysis. A water disinfection procedure is enclosed. If you have questions, contact the laboratory at 210-207-8887.

Step 7 – Remember:

Follow the proper procedure for water collection, assuring that every precaution is taken to avoid contamination. Be sure to use the sample container provided by the City of San Antonio Water Laboratory.

Guidelines and Regulations concerning water sampling are outlined in State of Texas "Drinking Water Standards" and the Federal "Safe Drinking Water Act."