
ENVIRONMENTAL Fact Sheet



29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

BB-13

2004

Water Sampling Protocol for Public Beach Inspections

Determining the Location for Taking Samples

When collecting an *E. coli* bacterial sample from a natural swimming area located on a lake or pond, collect the sample where the water is approximately one meter deep, or more commonly, collect the sample at knee depth. Samples should be collected from the left perimeter, right perimeter, and center of the swimming area. This "bracketing" of the area represents water quality of the entire swim area and not just one particular spot. Note: If the beach area is less than 100 feet in length, it is generally sufficient to take only two samples, each a third of the distance from either end of the beach.

In the case of a swim area located on a natural flow through watercourse, such as a brook or river, samples should be collected upstream and down stream at the beach perimeters. In streams or rivers where it is difficult to collect a sample at the desired one meter or knee depth, locate the deepest area with a moving current and follow the sample procedure.



Procedure for Collecting Samples

1. Always obtain and utilize a sterilized sample bottle(s) when collecting *E. coli* samples.
2. Wade into the water to knee depth. Wait for the water to be clear of debris that may have been disturbed while wading to the desired depth. Or, sample away from the disturbed area.
3. Remove the bottle cap carefully and avoid touching the inside of the cap with fingers or any other object.
4. Hold the cap in one hand and with the other hand turn the bottle upside down so the opening is facing the water surface. Make sure never to touch the opening of the bottle neck.
5. With a downward thrust, dip the bottle at least one foot below the surface. Fill the bottle with one sweeping motion, a U-shaped motion away from the body, and discard a few milliliters to allow some head (air) space.
6. Carefully replace and tighten the bottle cap to avoid cross contamination.

Note: Use sterile bacteria bottles to avoid cross contamination. Never touch the inside of the sample bottle cap or neck of the sample bottle, and always sample water that is flowing towards the body. Any bacteria that may be present on the body could contaminate the sample. Avoid improper sample collection. Improper sample collection

can include rinsing of the sample bottle, disturbance of the substrate, sampling in a disturbed area, improper sample depth, and improper sample technique.

7. Mark the name of the beach, town, date, sample location (left, center, right), and time the sample was collected. Make sure to always use a waterproof marking pen.
8. Transfer the samples to a cooler with ice or an ice pack to initiate the preservation process. Acceptable preservation temperature for *E. coli* samples is $\leq 10^{\circ}$ C.
9. Transport the samples to an accredited laboratory within 6 hours after collection.

Procedure for Collecting Cyanobacteria (Blue-Green Algae) Samples

1. Obtain a sterilized sample bottle, or use a clean (washed with soap and water) bottle or container. *Bottles do not have to be sterile for cyanobacteria samples, but must be clean.*
2. Inspect the beach, shoreline, and swim area for the presence of surface scums.
3. Remove the sample container cover. Dip the container into the water where the scum is present. Fill the bottle at least a $\frac{1}{4}$ full with the sample. Do not dip the container in the sediment.
4. Follow steps 7 through 9 above.

For Further Information

If you have any questions concerning the Department of Environmental Services' (DES) Public Beach Inspection Program, please feel free to contact the DES Biology Bureau at (603) 271-2963. Additional information can also be found on the Beach Program's website at www.des.nh.gov/Beaches.