



Massachusetts Water Watch Partnership

Standard Operating Procedure Lakes - 9

For Bacteria

Revision 0

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Overview

This procedure describes how to collect a lake grab sample for bacteria analysis either by wading near-shore or boating to an open water site. The field sheet mentioned in this SOP is MassWWP's Lake Field Data Sheet¹.

1.0 Equipment / Supply List

- Sterile pre-labeled High Density Polyethylene (HDPE) bottle, 250 ml
- Pair of latex gloves
- Hip boots or chest waders (near-shore sampling only)
- Rinse water and towel
- Field data sheet and pencils
- Cooler
- Cubed ice
- Frozen koolit
- Zip-loc bag (1-gallon size)
- 1 personal flotation device per person (boat sampling only)

2.0 Sampling Protocol

- 2.1** Wash hands with rinse water and dry with towel before starting sample run. If you sample in an area that may have high fecal levels, rinse hands before handling the next sample bottle.
- 2.2** Be careful not to touch your hands to yourself before you have cleaned them in order to avoid coming into contact with pathogens. If you are sampling from waters known to be contaminated with sewage, wear latex gloves to protect yourself.
- 2.3** Use pre-labeled sterile bottle (obtained from program coordinator or laboratory).
- 2.4** Sample should be taken from water representative of conditions you want to characterize (e.g. bathing beach, whole lake, tributary mixing area...). The water must be deeper than the sample bottle and free of surface scum and debris. Note

¹ Available at <http://www.umass.edu/tei/mwwp/acrobat/mwwplakedatasheet.pdf>

- that sampling from the lakeshore (as opposed to wading in) is discouraged, as it can result in non-representative samples.
- 2.5** Near shore sampling: Carefully wade into the lake to a depth of about 2 feet and avoid stirring up bottom sediment. Stop and wait for pre-disturbance (from wading in) conditions to return before taking sample. If a dock is present, it is acceptable to sample from there, provided the water depth is at least two feet. Boat sampling: Be sure to sample where the lake is more than 1 foot deep, and drop anchor on the side opposite to where you will collect sample. Wait for any disturbance of the bottom to settle and dissipate.
- 2.6** Place upright, capped sample bottle under the surface of the water about 6 inches. Do not rinse the bottle. Slowly uncap and let it fill to capacity under the water. With hands away from the bottle opening, bring the bottle up and out of the water, pour off a little water to leave some air space (approximately 1/2 inch) in the bottle. Cap the bottle and tighten.
- 2.7** Complete field data sheet immediately after collecting sample. On field sheet, record sample ID in the 'Bacteria' column for the appropriate depth. Include observations, such as presence of dogs in water, in the "other observations" section on side 1 of the field data sheet.

3.0 Transporting the Sample

- 3.1** Place the bottle in a clean zip-loc bag, place in a cooler filled with cubed ice. Frozen koolits are optional in addition to the ice.
- 3.2** Deliver to lab within 6 hours of collection.