



Massachusetts Water Watch Partnership

Standard Operating Procedure Rivers-5

For Total Phosphorus

Revision 0

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6/12/03

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Overview

This procedure describes how to collect a river grab sample for total phosphorus analysis.

1.0 Equipment List

- ___ One 250ml acid washed Total Phosphorus bottle, 250 ml
- ___ Field data sheet and pencils
- ___ Cooler
- ___ Ice
- ___ Frozen koolit
- ___ Zip-loc bag (1-gallon size)

2.0 Sampling Protocol

- 2.1 Use pre-labeled sample bottle (obtained from program coordinator or laboratory, see 3.1).
- 2.4 Sample should be take from flowing water. The water must be deeper than the sample bottle and free of surface scum and debris. If the water is not deep enough at your regular sampling site, look for another location nearby which is equally representative of the site but deeper. If there is none, do not collect a sample and indicate on your field sheet that water level is too low. Note that sampling from the streambank, as opposed to wading in, is discouraged, as it can result in non-representative samples.
- 2.5 Carefully wade into the stream, walking upstream to avoid stirring up bottom sediment. Stop and wait for pre-disturbance (from wading in) conditions to return before taking sample. If you are in a canoe, have your partner steady it at the desired location for a sufficient time to take the sample. Take sample in mid-stream, if possible. If not, get as far out from shore as is safe. Caution! Do not wade into swift and deep streams, and be careful at all times.
- 2.6 Always sample upstream of your body, and point the bottle opening upstream. Keep the bottle closed until just ready to sample.
- 2.7 Remove the cap from the bottle with one hand, without touching the inside of the cap or the inside of the bottle. With the other hand, hold the bottle near its base and plunge it, neck downward, below the surface.

- 2.8 Turn bottle until neck points slightly upward and mouth is directed toward the current. If there is no current, create a current artificially by pushing bottle forward horizontally in a direction away from the hand. Be sure not to collect any sediment you may have suspended by walking on the streambed. Also avoid collecting any water from the surface layer of the water as this is often uncharacteristic of the water underneath.
- 2.9 Replace cap on bottle and tighten.
- 2.10 On river field sheet, record sample ID and check the 'TP' column

3.0 Transporting the Sample

- 3.1 Bottle should be pre-labeled with lake name, site, date, and analysis requested (TP).
- 3.2 Place sample in a zip-loc bag, zip shut and place in a cooler. Cover the bag completely with ice.
- 3.3 Back home, place sample in freezer¹.
- 3.4 Deliver frozen sample to lab. You can mail samples overnight in a small cooler, with insulation and frozen coolits, to: UMass EAL, Blaisdell House, UMass, Amherst, MA 01003, attention Peter Kerr (413)545-2936.
- 3.5 Holding time prior to lab analysis for frozen sample is 12 months.

¹ Sample handling procedures are specific to the UMass EAL. If your samples will be analyzed by another lab, obtain that lab's handling procedures, as preservation methods vary with labs (e.g. acidifying rather than freezing samples).