PROTOCOL FOR SAMPLING BY WADING

Overview

The Protocol identifies how samplers should enter the stream, where the sample should be collected, and how to collect a sample (Figure 6) that will minimize the potential for contamination.

Sources

Environment Canada and B.C. WLAP (2005), EMAN-N (2005), Ministère de l'Environnement, Gouvernement du Québec (2000)

Special safety concerns

Wading can be one of the most dangerous ways to collect a sample. Wear a personal flotation device, enter the stream in a perpendicular manner and face upstream once at the location in the stream to sample. Different types of stream bottoms can pose individual hazards. Bedrock bottoms can be slippery because they are smooth or covered with algae, clay bottoms can also be slippery due to the fine nature of the sediments, and silt bottoms can be quite fluid and the sampler can sink into the bottom to several inches depth. Logs might be on the stream bottom and these can also be slippery, or if unseen, can cause the sampler to stumble and/or fall into the water. Deep fast water is dangerous to enter and maintain balance and samplers who are in these situations should take swift-water training separately. Shallow and fast flowing waters can also be dangerous if samplers are lulled into a sense of security.

At a glance

1 This kind of sampling does not work in lakes because a sample taken near the shore will not be representative of the lake system.

ascertain that the streambed is safe

2 Explore the streambed for large obstacles or holes if unfamiliar with the stream to be sampled or if the streambed changes at times. Wade carefully into the stream with a wading stick and safety line. Be aware of large ice that could knock you off balance or trap you. Also be aware of ice formation on rocks and other surfaces.

3 Once you are certain that it is safe, sampling can begin. When sampling by wading, always collect samples while facing upstream so that contaminants that may be on the sampler do not flow into the sample container.

4 Sample in the current away from the stream bank.

5 If the laboratory requires that bottles be pre-rinsed, this should preferably be done at a site below the actual sample location to prevent contaminants from entering the actual sample bottle. Remove the lid from the bottle and hold it aside without touching the inner surface.

6 If for some reason the water body appears to be stationary, the bottle should be plunged beneath the surface away from the

sample location until it is filled. Usually, such locations should be avoided.

7 Samples should be collected in the "clean-first" mode: extremely sensitive samples to contamination such as bacteriological samples should always be collected first before any bottles are rinsed.

8 Grasp the bottle well below the neck. Plunge it beneath the surface in front of you with the opening facing directly down then immediately orient the bottle into the current. Avoid collecting surface scum and film.

9 Once the bottle is full, remove it from the water by forcing it forward (into the current) and upwards.

Other sources

B. C. WLAP (2003), ISO (2008 a), Ontario Ministry of the Environment (2006), Newfoundland and Labrador Environment and Conservation (1999), New Brunswick 2000, Saskatchewan (Undated)

Photo 6. Wading and sampling
(Environment Canada, B.C. WLAP 2005)

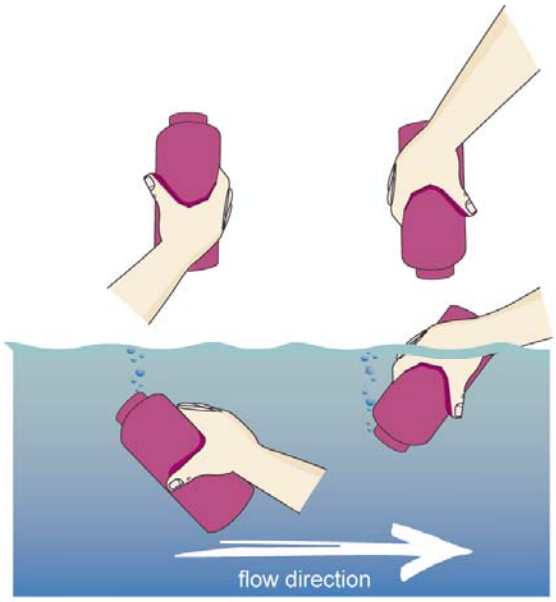

Figure 6. Procedure for collecting sample
(Source: Ministère de l'Environnement, Gouvernement du Québec (2000))