

6.3 PROTOCOL FOR MONITORING FOR PHYSICAL CHARACTERISTICS, NUTRIENTS, IONS, AND METALS IN GRAB SAMPLES

Overview

This protocol outlines the general procedures for collecting a grab sample. Following this protocol will reduce the risk of contamination and ensure that the sample is collected safely.

Sources

Environment Canada and B.C. WLAP (2005 c), Environment Canada (2006 b), Alberta Environment (2006 a)

At a glance

bottle usage

1 Only use sample bottles provided by the analytical laboratory specific for each analysis. Reject any uncapped bottles (especially those for analysis of trace metals and other contaminants). Ensure there is always at least one extra set of bottles on hand. When sampling store caps in a plastic bag.

2 Ensure bottles remain capped until sample collection and are stored under clean conditions (e.g., in cooler, plastic bag, etc). Vehicles should also be kept reasonably clean to limit potential contaminant sources.

*do not touch
cap or
inside of
sample
bottle*

3 Only leave the sample bottle uncapped while rinsing (if rinsing is required), filling the bottle and/or adding preservatives. Do not touch the cap liner or the inside of the sampling bottles (even when wearing gloves). Only the water sample and the preservative should touch the inside of the sampling bottle or the cap.

4 Review the documentation accompanying the sample bottles. The documentation should refer to sample collection, storage and transport requirements. If necessary consult with laboratory personnel regarding any specific instructions. If samples are to be submitted close to or on the weekend, make arrangements with the laboratory to ensure sample holding times are still enforced.

read MSDS

5 Ensure all preservatives are sealed and within the marked expiry date. Add preservatives to samples in an area away from potential sources of contamination (e.g., roads and car parks [dust and hydrocarbons]). Become familiar with the MSDS for all preservative chemicals. When handling the preservatives always wear safety glasses and gloves.

*collect
samples at
bow of the
boat*

6 Samples should always be collected at the bow of the boat. If anchored from the bow of the boat, position the bow upstream. This reduces the potential for contamination in the sample from the motor or the boat itself. Ensure the sample is collected in good flow, not in an eddy or backwater. When grab sampling, face upstream to avoid any stirred-up sediment and sample below the water surface.

7 When not in use, keep all sample collection equipment in sealed clean plastic bags or in a clean cooler.

no smoking

8 Sampling personnel should wear un-powdered latex or

or eating polyethylene disposable gloves while collecting water samples and refrain from smoking or eating. If gloves are not worn, jewelry and watches should be removed. Do not use insect repellent if sampling by hand or be very careful that insect repellent does not come into contact with the samples.

9 While sampling avoid submerged vegetation and ensure sample is free of obvious foreign material not representative of the water column at time of sampling (e.g. algae, sediment, organic matter, etc.). Cap tightly and store the water samples at 4°C in a closed cooler for transport.

10 Filter and/or add preservatives immediately or as soon as possible after sample collection. If the samples are to be laboratory-filtered, ship them as soon as possible. Ensure the samples arrive at the laboratory well within the specified hold time for un-filtered and un-preserved samples.

Other sources

B. C. WLAP (2003), ISO (2008 a), Ministère de l'Environnement, Gouvernement du Québec (2000), Environment Canada Undated (a), Environment Canada (2008 draft), Ontario Ministry of the Environment (2006), Newfoundland and Labrador Environment and Conservation Newfoundland and Labrador Environment and Conservation (1999), Environment Canada (1999) draft, New Brunswick 2000, Saskatchewan (Undated), EMAN-N (2005), Environment Canada (2009), Nova Scotia Department of Environment and Labour 1996, Environment Canada (2003 a)