

5.1 PROTOCOL FOR FILTERING PHOSPHORUS AND NUTRIENT SAMPLES

Sources

Environment Canada (2006 b), Environment Canada Undated
Wolfe Island Field Site Sampling Protocol (Draft)

At a glance

1 Rinse glassware with Milli-Q water. Use fully open glass filtration cup. Wearing disposable gloves and using tweezers, place cellulose filter on filtration holder. Place filtration cup on holder and clamp securely.

2 Clean glassware, using glass 500 mL graduated cylinder, filter aliquot (250 mL) of raw sample water. Rinse this filtrate around the Erlenmeyer flask and pour out. Repeat using the same filter paper.

3 Change filter paper and filter another aliquot (750 mL) of raw sample water. Using the filtrate, rinse the sample and duplicate bottles, and lids, twice, then fill bottles with sample water.

4 Using the filtrate, rinse the 125 mL glass sample bottles and lids twice, then fill with sample water. Add 1 mL of 30% sulphuric acid preservative to each phosphorus bottle and mix well by inverting. Store the samples in a refrigerator

5 Remove filter paper from the filtration unit, and rinse the filtration unit with 200 mL Millipore water. Pour water out in a sink; allow water to drain from Erlenmeyer flask.

*keep out of
direct
sunlight*

6 For **chlorophyll-a** samples, ensure that the sample bucket and filtering apparatus are kept out of direct sunlight. Rinse the filter funnel and graduated cylinder between samples with de-ionized water. Always use forceps marked for chlorophyll-a filtering when handling filters.

*always wear
gloves*

7 For **particulate nitrogen and carbon**, rinse filtration glassware with Milli-Q water methanol then sample water. Wearing gloves and using tweezers, (do not touch with fingers), place a Whatman GF/C filter on the filtration holder. Place the square slotted filtration cup on the filter and clamp securely.

8 Using the glass 500 mL graduated cylinder, filter an aliquot (total 1000 mL), of well mixed whole water. The vacuum is set at 5-7 psi, the depth of sample water in the cup 2-4 cm. Ensure there is no leakage at the edge of the filter paper. The final sample should be contained only in the small rectangular opening of the filtration cup.

9 After the water sample has passed through the filter, rinse the inside of the filtration cup with 2-5 mL of Milli-Q water. Maintain the vacuum at 5-7 psi. Carefully add 2-5 mL of 0.1 N H₂SO₄ to the filter and continue to filter, (sulphuric acid removes carbonates). Rinse again with 2-5 mL of Milli-Q water.

10 With vacuum on, remove filtration cup. Continue vacuum

filtering to remove any excess water from the GF/C filter. When filter paper is drained, turn off vacuum and transfer filter paper carefully to a labeled Petri dish (label with date, site, volume, parameter and duplicate code if required). Wrap Petri dish in foil and place in a vacuum dessicator (20 psi) for 2-3 days. When the filter paper is dry, place the Petri dish in an air-tight container in a refrigerator.