



VOLATILE ORGANIC OR TOTAL TRIHALOMETHANE SAMPLE COLLECTION

For Safe Drinking Water Act (SDWA) compliance

A) General Requirements - (Please read these instructions prior to sample collection)

This mailer is to be used only for water samples that are to be tested for Volatile Organic or Total Trihalomethane Analysis and are regulated under the Safe Drinking Water Act. Your sample(s) should be collected early in the week, preferably Monday or Tuesday.

- 1) Safety recommendations for sample collection:
 - a) wear safety glasses;
 - b) wear vinyl gloves;
 - c) collect the samples in a well ventilated area.

B) Site Selection

- 1) The sample must be collected at the appropriate point in the water supply system, typically, entry point for volatile organic (VOC) and end of distribution for total trihalomethane (TTHM). Please refer to the DNR monitoring schedule for your system to determine the appropriate sampling location.
- 2) Prior to sample collection, the area around the sampling point should be evaluated for possible air contamination from volatile organic chemicals (VOCs). Check for the recent use of petroleum products, solvents, cleaners, or degreasers that could potentially contaminate the sample. (For example, the storage of gasoline or other petroleum products in the pump house will give off many VOCs.) If such a situation is encountered, and particularly if there is an odor in the air, collect the sample at another nearby faucet or ventilate the area if possible. (The presence of a standby generator in the pump house has not been shown to be a problem.)
- 3) Some other products that may give off VOCs and could possibly contaminate a sample are:
 - perfumes and cosmetics;
 - skin-applied pharmaceuticals;
 - suntan lotion;
 - automotive products (starting fluids, wire dryers, windshield deicers, carburetor cleaners, etc.);
 - crystalline bathroom and urinal deodorizers;
 - plumbing compounds.

Note: The mailer should be kept sealed prior to usage to prevent contamination from the surrounding environment (e.g. VOC levels in the air around service stations are much higher than in other urban areas).

C) Mailer Contents

- 1) The mailer contains five (5) or nine (9) - 40 ml clear vials, and a trip blank (**TB**) which is filled with water from the lab. The Trip Blank has tape covering the cap. Do not open or tamper with the trip blank. There are also 1-2 plastic vials of 1:1 Hydrochloric acid (HCl) and an eye dropper used to acidify the clear vials. ***FOUR (4) VIALS MUST BE FILLED AT EACH SAMPLING LOCATION.*** (An extra vial is included in case of breakage or a problem in sampling with one of the other vials.)
 - a) Each clear vial contains a small amount (25mg) of ascorbic acid. The ascorbic acid acts as a preservative by chemically reducing "free" chlorine. The Hydrochloric Acid acts as a preservative by removing bacteria that may break down some chemicals.

D) Collection Procedure

- 1) If the sample faucet contains an aerator, remove it.
- 2) Run the water until it is cold.
- 3) Reduce the water flow to a gentle thin stream.

- 4) Remove the cap from the sample vial, making sure that the Teflon liner does not fall out. (If the liner falls out, replace it in the cap, Teflon side down, and rinse it under running water for 30 seconds.)
- 5) Fill the clear vials by running the stream of water along the inner wall of the vial (to minimize the formation of air bubbles). Fill the sample vial approximately three fourths full and add 5 drops of HCl. Continue to fill the sample vial to the brim forming a positive (convex) meniscus. Do not overfill the vial because you will lose the preservatives and possibly compromise your sample.
- 6) Replace the cap by gently setting it on the water meniscus. (The thin Teflon side of the liner should be in contact with the water in the vial.) Tighten the cap firmly, but do not over-tighten—it is relatively easy to break the neck of the vial by twisting too hard.
- 7) **Be sure that there are NO AIR BUBBLES in the clear vials after they are filled and capped.** Turn the vial over to check for bubbles. If there is a bubble larger than the size of a small pea, open the vial and add more water.
- 8) Repeat steps four (4) through seven (7) for each of the other vials, opening, filling and capping them one at a time.
- 9) Legibly label each vial with the PWS or Facility ID number and the sampling point identification with a waterproof pen.

E) Packaging and Shipment of the Mailer

- 1) Return the vials to the mailer so that they are securely placed in the styrofoam vial holder.
- 2) Place the HCl vial(s) and pipet back in the Ziploc bag, seal and place it in the Styrofoam vial holder also. We will dispose of these items at the lab.
- 3) With the styrofoam vial holder containing the vials inside the plastic bag, and the bag inside the mailer, fill the plastic bag with crushed or cubed ice so that all the vials are completely surrounded and so that the lid is able to seal the mailer shut.
- 4) Twist the plastic bag closed. Turn the twisted part of the bag over on itself and secure the bag with the enclosed cable tie. The plastic bag must be completely sealed to prevent water leakage during shipment.
- 5) Legibly and accurately fill out Section II—to be completed by the SAMPLER—of the ***Volatile Organic or Total Trihalomethane Analysis*** laboratory request form that was provided to you by the Wisconsin Department of Natural Resources (WDNR). Each sample should be accompanied by its own lab sheet. **Do not send any sample without this form.** (If you do not have the form, please contact the local DNR office.) Place the label with the Ascorbic Acid and HCl Lot numbers on the bottom center of the lab form. Place the laboratory request form in the enclosed plastic bag (along with these instructions and the two Material Safety Data Sheets), and include it in the mailer on top of the sealed, iced sample bag.
- 6) If you are returning the mailer via a **private delivery service (UPS, Fed EX, etc.) use the White and Red label.** If you are returning via **US Mail use the orange label.**
- 7) Put the lid on the container. Securely tape the cardboard box shut with one strip of tape.
- 8) On the label on the outside of the box to the left of the mailing label, identify the type of water sample that is enclosed. Ship immediately to the Wisconsin State Laboratory of Hygiene.

Questions - Please contact the Organic Chemistry Unit of the Wisconsin State Laboratory of Hygiene at (608) 224-6269. Safety Data Sheets - <http://www.slh.wisc.edu/environmental/water/environmental-test-kit-safety-data-sheets/>