

CONDENSED LABORATORY PROCEDURES

Items needed for sample processing:

- Data Sheet from the Field Notebook and a pencil (no pens please)
- 250 ml graduated cylinder and a 500 ml cylinder (if doing TSS filters)
- Receiving flask (side-arm variety)
- Filter funnel assembly (filter base and funnel)
- Hand vacuum pump with hose
- Chlorophyll filters and TSS filters (if you are processing for TSS)
- Plastic nutrient bottles
- Water-proof marker (Sharpie)
- Forceps (aka tweezers)
- Stapler with extra staples
- Desiccant container with loose desiccant inside

Procedures

1. Cyanotoxin Vial

- A. Using the water-proof marker (e.g. Sharpie), fill in the required information on bottle.
- B. Open bottle and remove vial.
- C. Shake 500 ml composite container to mix sample.
- D. Fill vial ½ full with water from composite container.
- E. Freeze vial on its side (to prevent breakage).

2. Nutrient Bottle

- A. Using the **water-proof marker**, fill in the required information on a nutrient bottle.
- B. **Shake the Sample Bottle** vigorously to make sure the water is well mixed.
- C. **Rinse the nutrient bottle three times** with lake water and then fill to the line.
Check off on the Data Sheet.
- D. Store in freezer

3. TSS Filters

- A. Put the filter apparatus back together.
- B. Using the tweezers place a TSS filter on the base of the filter funnel. Remember that there is no real smooth side and that this filter is a little smaller so be **extra careful to center it**.
- C. **Shake the sample bottle** vigorously and measure 500 ml in the graduated cylinder.
- D. Pour about half the water into the filter funnel and start to work the hand pump. When most of the water has passed through the filter, swirl the remaining water in the cylinder and pour it into the filter funnel.

- E. **Using a pencil**, fill out the appropriate information on the Data Sheet and on the filter house.
- F. Remove the filter funnel, open the filter house. **Using the forceps** to center TSS filter on the fold in the center of filter house. Fold in half, fold sides and top in, staple and place in the container with loose desiccant.
- G. Repeat steps B to F for second TSS filter, then **empty receiving flask**

4. Chlorophyll Filters

- A. Set-up the filter apparatus by placing the rubber stopper of the filter funnel base into the receiving flask. Attach the hand pump hose to the side of the receiving flask.
- B. **Using the forceps** (tweezers) place a chlorophyll filter on the base of the filter funnel. Put the funnel portion of the filter funnel assembly straight down on top of the filter base making sure you don't knock the filter off center.
- C. **Shake the sample bottle** vigorously and pour out 250 ml into the graduated cylinder.
- D. Pour water into the funnel and work hand pump to create a vacuum.
- E. **Using a pencil**, fill out appropriate information on the filter house and Data Sheet.
- F. Remove the top of filter funnel, open the filter house and using the tweezers center chlorophyll filter on fold in the center of filter house. Fold in half, fold sides and top in, staple and place in the container with loose desiccant.
- G. Empty receiving flask.
- H. Repeat steps B to F for second chlorophyll filter.
After second filter, save the water in the receiving flask for next step!
- I. Store Desiccant container in freezer when finished with filtering.

5. Nitrate and 6. Ammonium:

- A. Label then rinse bottles (as in Nutrient Bottle step) using water in receiving flask. Fill each bottle to neck with water from receiving flask. Freeze bottles

Clean Up

- A. Before dumping sample bottle out, make sure you have completed all filters as well as filled the nutrient, nitrate, and ammonium bottles.
- B. Rinse out the sample bottle, algal toxin composite bottle, graduated cylinders, receiving flask and filter funnel assembly with distilled water. **No soap or detergent.**
- C. Let the equipment air dry before returning to the storage box.
- D. Make sure you have filled in all needed information on the Data Sheet including the time spent on the program.

CONDENSED FIELD PROCEDURES

Equipment needed in the field:

- Anchor
- Field notebook with Data Sheets and pencil
- Thermometer or Fish Hawk device
- Secchi disk, clothes pins, and tape measure
- One 2 liter Sample Bottle for each site being sampled (1 liter bottle OK if not measuring TSS)
- Cyanotoxin Sampling Device and composite container
- cooler with ice or ice-pack

Procedures:

Unless it is calm, anchor boat to limit drift.

Fill out top of Data Sheet.

Circle the terms that you feel best describes the sky and wave conditions.

1. **Temperature:** Take water temperature of the lake by placing the thermometer just below the surface of the lake. Let the thermometer stay in the water for at least two minutes to allow it to stabilize. Record reading on Data Sheet. If you are using the Fish Hawk to take temperature/depth measurements, please do so now.
2. **Secchi:** Take Secchi reading from the shaded side of the boat. Record reading on Data Sheet.

Rinse the *Sample Bottle* and 500 ml *Composite Container* 3 times with lake water.

3. **Sample Bottle:** Use composite container to fill sample bottle with lake water.
4. **Cyanotoxin Sample:** Collect three cyanotoxin samples with tube and pour each into composite container. Place composite container in cooler with an ice-pack or immediately pour water into vial until halfway full, return vial to bottle, label bottle.
5. Record **wave condition**

Store sample bottles in a cooler with an ice-pack until processing