# ­­I. Pre-departure Equipment Check - Complete the following checklist *before departing* the dock

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| --- | --- | --- | --- |
| ⃝ | CSLAP Field Observation Form; Sampling Record Form | ⃝ | Pen or pencil to fill out forms |
| ⃝ | Thermometer | ⃝ | Watch, phone, etc. to get time of day, GPS |
| ⃝ | Secchi disk and tape measure | ⃝ | Boat, anchor and line, appropriate safety equipment |
| ⃝ | Kemmerer sampling bottle and marked line | ⃝ | Camera or phone for photos of algal blooms |
| ⃝ | Collapsible water sample container and cap with spigot (For stratified lakes – deep collection container also), and a cooler to store samples | ⃝ | Supplemental surface water collection container (or replacement large container) |
| ⃝ | Plastic gloves for surface and deep sample collection |

# II. On-Lake Observations, Secchi, and Air Temperature Readings

1. Go to your sampling site by using GPS or triangulation and anchor (if possible)

2. Fill out both sides of the “**CSLAP Field Observation Form – Lake Perception and Health and Safety**” before collecting any other data

3. Fill out the **CSLAP Sampling Record Form**

* Record the lake name, Round #, date, and volunteer names.
* Determine water depth with Secchi disk or depth finder and record to the nearest 0.1 meter.
* Record lake level (High, Normal, Low).
* Record Secchi disk depth off the shady side of boat to the nearest 0.1 meter – *do not use aids or sunglasses.*
* Record the sampling time.
* Record the air temperature, using the provided thermometer, to nearest °C.
* Assess and record today’s wind and sky conditions.
* Record weather conditions that have occurred over the past week.
* Briefly note any unusual weather conditions, if applicable, in the comments section.
* Include a brief summary of any lake management activities taking place (herbicide applications, harvesting, oxygenation, etc.) in the comments section, if necessary

# III. Sample Collection, Water Temperature, and Odor Observations

Important Tips:

* **Remember to wear gloves** **throughout sample collection**!
* Keep the Kemmerer line as straight as possible.
* Avoid touching inside the Kemmerer while setting the tripping mechanism.
* Avoid touching the spigot/sample while discharging from container.
* You made need several Kemmerers full of water (At least 2 for surface, 1 for deep sample).

1. Using the Kemmerer, collect **Surface Sample** water at 1.5 m depth, unless otherwise instructed.Record collection depth.
2. Rinse the collapsible container with sample water (fill ¼ full, shake, and discard completely) before filling container with sample water.
3. Measure and record water temperature from the container to the nearest °C.
4. Put collapsible container in a cooler (preferable), or in the shade to keep cool.

**For those collecting a Deep Sample:**

1. Record deep sample collection depth (~1.5 m from the bottom).
2. Measure water temperature from the deep sample to the nearest 1° C, note if there is a sulfur odor.

# IV. Shoreline Algae and Aquatic Plant Observations

* Assess for shoreline bloom conditions. Take photos of any HAB accumulations and report through NYHABS.
* Complete aquatic plant observations in the comments section. Collect specimens for photographing and ID if needed.

# On-Shore Sample Processing

Important Tips:

* Samples should be processed immediately! Failure to do so will change the water chemistry and impact the integrity of the data.
* **Remember to wear gloves throughout sample processing!**
* Before processing, label the bottles with the sample date and organize based on parameter.
* Open bottle caps 1 at a time, as you fill them; Avoid touching the inside of the bottle caps or bottles.
* mL is short for milliliters, which is a measurement of volume and is marked on the graduated cylinder

# I. Surface Sample: Fill the following bottles *without* filtration from the collapsible container

1. Completely fill the pH bottle to the top with water, leaving no air gap, and refrigerate.
2. Mix the surface sample by gently inverting the collapsible container.
3. Fill Total Phosphorus (TP), Total Nitrogen (TN), and Nitrogen Oxides/Ammonia (NOx/NH3) bottles to the shoulder with surface water, and freeze.
4. Fill the calcium and chloride bottles (not in every round) with water to the shoulder and freeze.

# II. Surface Sample: Filter water from the collapsible container for the following samples

* Prepare by rinsing the entire filtration apparatus with distilled water.
* Mix the surface sample by gently inverting the collapsible container.

Color Sample:

1. Using forceps, place 1 filter paper in the filter holder.
2. Secure filter to holder by gently threading the upper cup onto the holder
3. Filter 100 mL water – apply a slight vacuum (a few pumps) to avoid rupturing the filter
4. Discard the filter
5. Pour the filtered water into the Color bottle and freeze.
6. Rinse equipment with distilled water

Chlorophyll *a* (Chl-*a*) Sample:

1. Using forceps, place a second filter into the filter holder
2. Shake the MgCO3 bottle well and cover the filter paper with 6-10 drops of MgCO3.
3. Filter 100 mL of water. Rinse down graduated cylinder and walls of upper apparatus with distilled water; filter to capture all Chl*-a* (algae)
4. Remove the filter with forceps, fold in quarters; place in pointed end of vial labeled Chl-*a* (do not add water)
5. Wrap entire vial with aluminum foil and **freeze**.
6. Discard any remaining surface sample water and rinse equipment with distilled water

# III. Deep Sample (if applicable): Fill the following bottles *without* filtration from the collapsible container

1. Mix deep sample by gently inverting the collapsible container.
2. Fill the TP and NOx/NH3 bottles to the shoulder with deep sample water and **freeze**.

# IV. Finish Processing, Online Data Entry, Prepare samples for shipping

1. Verify paperwork is complete, all bottles are labeled and dated correctly.
2. Enter field data and report HABs, if applicable, using the CSLAP Dashboard: on.ny.gov/cslap\_dashboard (case sensitive). **Make sure paper data and online data entry match.**
3. Refrigerate pH bottle.
4. Freeze all other bottles and Chl-*a* vial. Place ice packs in freezer with samples so that they freeze solidly.
5. Rinse equipment with distilled water and set aside to dry. Hang Kemmerer open to dry completely.
6. Completely fill out the Chain of Custody form and compare the bottle list to the ones you are shipping.
7. Ship all samples the following day (samples have “holding times”).
8. Pack all samples in the big cooler box with sufficient ice packs to remain cold.
9. Place paperwork on top of cooler inside cardboard box. Use a separate sheet on top to request any needed supplies (Do not write notes on COC or Sampling Record Form).
10. Take to the nearest FedEx facility for shipment.