



Dissolved Oxygen Temperature Procedure Checklist



Equipment Checklist

- Boating safety equipment* and anchor* * provided by volunteer
- DO/Temperature meter and cable/probe
- Probe cable weight
- Safety lanyard
- Quick-reference DO calibration card
- Equipment storage box and supplies
- Secchi disk*
- Weighted measured line*
- Pencil* or permanent ink pen*
- DO/temperature data form(s)
- Copy of Dissolved Oxygen/ Temperature procedure checklist

Data Collection

Sampling location, frequency, and timing

- 1. Dissolved oxygen and temperature are measured from the surface to within 3 feet of the bottom, as a profile, in the deepest basin of the lake.
- 2. Measurements are taken at 5-foot intervals in the upper part of the water column. Through the mid-depth region or thermocline (15 to 45 feet), measurements are taken at 2½ foot intervals. Below the thermocline, measurements are made every 5 feet.
- 3. Conduct the DO/Temp monitoring every other week from mid-May through mid-September in calm water.

A. Prepare for sampling (on shore)

- 1. If it is not already done, connect the probe cable to the handheld meter cable at the bayonet connectors.
- 2. Turn the meter on and wait 15 minutes for the meter to warm up.
- 3. Calibrate the meter according to the “Quick Start Guide” that is included in the DO equipment box. If the “Quick Start Guide” is missing you can also find the calibration instructions in the full monitoring procedures found at MiCorps.net.

Users of the Pro20 meter can disregard the next two steps.

- 4. Record the DO calibration (% air saturation) reading (main display), and the lake altitude value on the DO/temperature data form.
- 5. If the DO Calibration reading is not between 93-103%, then recalibrate the meter. If it still does not work, the membrane may need to be replaced. Troubleshooting contact:
Tamara Lipsey, Michigan EGLE, 517-342-4372, lipseyt@michigan.gov

B. Proceed to your monitoring location over the deepest point in your lake

- 1. Travel to the deepest basin of the lake.
- 2. Approach the sampling location from the upwind direction. Turn off boat motor, lower the anchor, and allow the boat to drift over the sampling station (deepest point) before securing the anchor line. This allows you to take your DO and temperature measurements over a relatively non-disturbed area.

C. Measure the DO/Temperature profile using the meter

- 1. Make sure that the DO readout is in mg/L and not % and temperature is in Celsius. Hit MODE to switch between these measurements.
- 2. Determine the lake depth using Secchi disk or weighted measured line; note the depth on the data sheet.
- 3. Lower the probe 1 ft below the lake surface. Slightly jig the probe up and down until the meter mostly stabilizes; it is unlikely to stabilize completely so you have to use best judgment. Record the DO (mg/L) and the temperature (°C).
- 4. Lower the probe to the next depth shown on the data sheet and make a slight jiggling motion; allow sufficient time at each depth for the DO and temperature readings to stabilize; repeat the process for every depth on the data sheet.
- 5. Your final DO/Temp measurement will be about 2-3 feet above the lake bottom; do not allow the probe to touch the lake bottom.

Note: if it is too windy the cable/probe may not remain perpendicular to the surface of the lake while taking the measurements. It is best to take the DO/temperature measurements on a calm day.

Reporting Your Results

1. If you can, **please enter your data into the MiCorps Data Exchange found at MiCorps.net.**
If you are unable to enter your own data into the MiCorps Data Exchange, MiCorps staff will enter your data for you after we receive a copy of your data sheets in the mail or via email at MiCorps@msu.edu.
2. **Whether you entered your data online or not, mail or email a copy of your data sheet at the end of the season.**

Mail a copy to:

Michigan State University Extension
4747 W 48th St, STE 107
Fremont, MI 49412

For electronic submission, send to: MiCorps@msu.edu

All data must be entered into the database and the hard copies mailed or emailed by **October 31st**.

Questions?

Contact: Tamara Lipsey, MiCorps Program Lead: lipseyt@michigan.gov, 517-342-4372 or Erick Elgin, MiCorps Lakes Program Manager: elgineri@msu.edu, 218-340-5731