The Meadows Center for Water and the Environment
Texas State University

Texas Stream Team
PROBE CORE FIELD GUIDE – EXTECH EXSTIK II

IMPORTANT- All probes must be calibrated before use. Calibrating the conductivity/pH probe can be done the night before a sampling period but can be performed no later than 24 hours before sampling. Calibration only needs to be performed once within a 24-hour period.

At Site

1. Record *Field Observations* and any comments in *Measurement Comments and Field Observations*.

2. Hang thermometer out of direct sunlight, wait two to three minutes and record *Air Temperature (°C)* to nearest 0.5 degree.

3. Check *Secchi Disk Transparency* with Secchi disk in water shaded from the sun. Lower Secchi disk in water until it disappears, mark depth, then raise Secchi disk until barely visible, and mark depth again. Average both depth readings and record to nearest 0.01 meter (1 centimeter).

4. Measure the water's *Total Depth*. Lower Secchi disk into water again until cord becomes slack, then raise until straight. Mark and record to the nearest 0.01 meter.

5. To do a bucket grab, rinse water bucket TWICE and discard rinse water downstream. If the water depth at the sampling point is less than 0.5 m (a little over 1.5 feet), collect samples at a depth equal to one-third of the water depth measured from the water surface. If the water depth is greater than 0.5 m, collect samples at a depth of 0.3 m (about one foot) below the surface.

Conductivity

Calibration

1. Rinse a sample beaker as well as the conductivity probe with the standardizing solution twice. Then fill the beaker with up to 20 mL of the standardizing solution.

2. Turn the probe on and insert the probe into the solution. Stir the probe slowly in the solution for two minutes to remove any air bubbles.

3. Make sure the probe is displaying the conductivity mode. A small "μS" (microsiemens) symbol should be displayed at the top of the screen. If your probe is already in conductivity mode, skip to Step 5.

4. If the probe is in any mode other than conductivity, press and hold down the MODE/HOLD button and toggle through different units of measurement until you reach conductivity (microsiemens). Once the CON symbol is shown at the bottom of the screen and the "μS" symbol is displayed at the top, release the button.

5. Press and hold the CAL/RECALL key until "CAL" appears in the lower (temp.) display. Release button.

6. When calibration is complete, the probe automatically displays "SA," then "End" and returns to normal operation mode. The probe should now be calibrated and display a number identical or close to 1413 μS/cm^3.

Measurement

1. Rinse the sample beaker and conductivity probe with your sample water. Be sure to deposit the rinse water downstream away from your sample point.

2. Fill the sample beaker up to 20 mL and stir the probe for two minutes to remove air bubbles.

3. Press down the MODE/HOLD button and toggle to display conductivity. Completely submerge the probe and take your conductivity and water temperature reading.

4. Rinse probe and beaker with distilled water.
Note: If the screen appears to lock and the word "HOLD" is displayed on the screen, press the MODE/HOLD button once to unlock it.

pH

Calibration

1. Rinse a sample beaker as well as the probe with the pH buffer solution twice. Then fill the beaker with up to 20 mL of the pH buffer.

2. Turn on the pH probe. Make sure the probe is displaying the pH mode. A small pH symbol should be displayed between the measurement number and temperature. If your probe is already in pH mode, skip to Step 4.

3. If the probe is in any mode other than pH, press and hold the MODE/HOLD button to toggle units of measurement. Once the pH mode is displayed, release the button.

4. Place the probe into the pH buffer solution (4, 7, or 10). Press and hold the CAL/RECALL key until "CAL" appears in the lower (temp.) display.

5. The probe will automatically recognize the solution and calibrate itself to that value (the circled number on the LCD will match the solution).

6. When calibration is complete, the probe automatically displays "SA," then "End" and returns to normal operation mode.

7. Rinse probe and beaker with distilled water.

Measurement

Note: If you have already taken your conductivity measurement, you do **not** need to rinse your probe and beaker again with the sample water.

1. Press the ON button to turn on your pH probe.

2. Press and hold the MODE/HOLD key to scroll to the pH measurement mode.

3. Insert the probe into the sample water making sure that the probe is completely submersed.

4. Take your pH reading and record on your monitoring form.

5. Rinse probe and beaker with distilled water.

Dissolved Oxygen

Calibration

1. Remove the probe cap and moisten but don't soak the sponge contained inside the cap with distilled water.

2. Turn the probe on and press the MODE/HOLD button until the percent saturation mode (%) is displayed on the LCD.

3. Keep the probe on and allow it to fully polarize. If you haven't used the probe in more than 7 days, this may take 2-3 minutes.

4. Turn the probe off. If the probe is fully polarized, a tiny asterisk will be visible from the bottom right portion of the screen.

4. Replace the probe cap. Turn the probe back on and wait until the reading stabilizes. Press and hold the CAL/RECALL button until CAL is shown in the lower display. The readings will blink "101.7" and "SA" will appear.

5. When the calibration is complete, "END" will appear and then the probe will return to the normal measurement mode. Turn the probe off.

Measurement

1. Turn on your DO probe.

2. Toggle the desired unit of measurement by pressing and holding the MODE/HOLD button until the DO – mg/L unit is shown in the display.

3. Rinse both the sample beaker and the probe in the sample water twice. Dispose of the sample water downstream away from your sample point.

4. Fill the sample beaker with 20 mL of sample water and then stir the DO probe for two minutes to remove any air bubbles.

5. Take your DO measurement and record on your monitoring form. When entering in the Dataviewer, just record the one probe measurement value for both titrations.

6. Rinse probe and beaker with distilled water.

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