

- WRP water quality conductivity instructions for Oakton EC1 waterproof pens

Step 1: Turn on the conductivity pen

a. Press the power button (for this pen, you can either “press” or “hold” the buttons. A “press” is a less than 2 second touch of the power button. A “hold” is an over 2 second touch of the power button. To turn on the pen, **press** (do not hold) the button.



power button

Step 2: Wait for conductivity screen to appear

- a. Immediately after you press the power button, the screen will show “r 1.0”. If working correctly this will only be on the screen for ~1-2 seconds. Do not press any buttons while this is showing.
- b. After the “r 1.0” screen, the pen will display the conductivity reading screen. With no water being tested, the screen should read 0.0 for conductivity. This screen also has the temperature reading (in either Celsius or Fahrenheit) in a small font under the conductivity



Conductivity Screen:

Conductivity

Temperature (Celsius)



Step 3: Fill the cap with water

- a. For the old pens, the easiest way to measure conductivity was to dip the pen directly into water or to fill a yogurt container with water and dip the pen into that. For these pens, the easiest method (and the one that yields the best results) is to fill the cap with water and then reattach it to the pen.
- b. As shown in the picture to the left, remove the cap from the pen and fill with water to the “fill” line



“Fill” line

Step 4: Reattach cap to pen

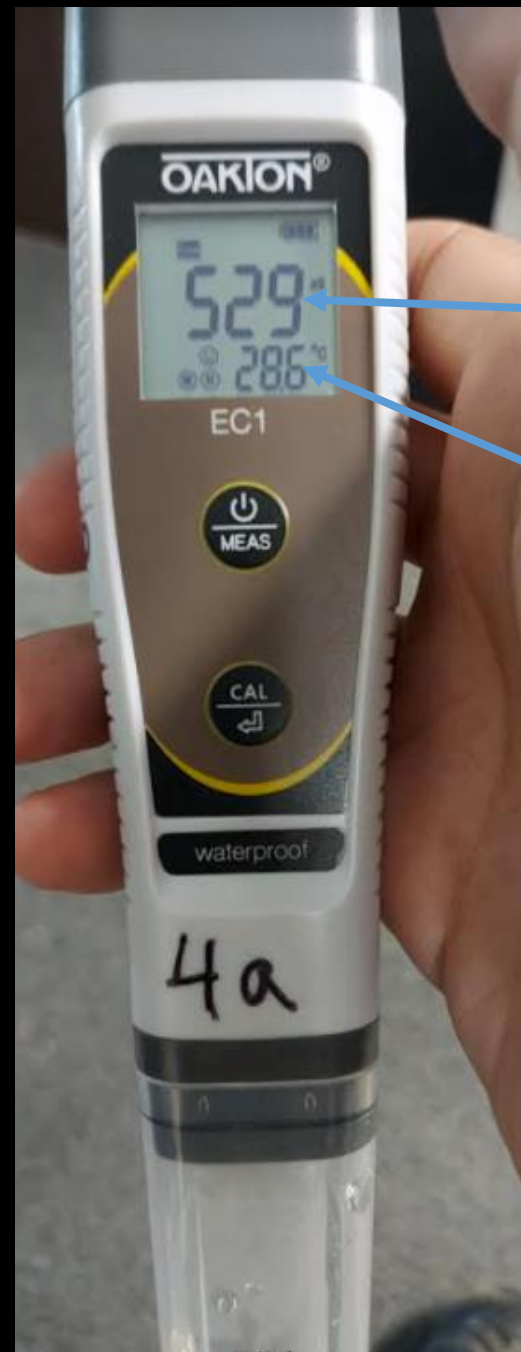
- a. Attach the cap (now filled with water) to the conductivity pen. You do not need to press any buttons during this process. Once the cap is attached, the pen will automatically start reading conductivity.
- b. These pens require ~1 min to provide a stabilized result. The screen will show a result immediately after you attach the cap, do not record this result. Wait 1 min before recording a result.



Immediately after attaching the cap, my pen provided a reading of 518

Step 5: Read your conductivity result

- a. After ~1 min the number shown in the conductivity area of the screen should stabilize and no longer bounce around between numbers. Record the number on the screen. As you can see, my result changed from 518 to 529 over the course of the minute (at times the change can be even larger!)
- b. The old pens only displayed numbers by the tens (for example the 529 reading on the left would be 530). You can record the full number (529) or you can round it to the closest ten (example: 143 would round to 140, 146 would round to 150).
- c. You can record the temperature shown on the pen on your bottle and data sheet as well. We aren't officially measuring this data point, but we like to have the information



Final conductivity reading

Final temperature reading

Step 6: Turn off the conductivity pen

- a. Hold the power button (for this pen, you can either “press” or “hold” the buttons. A “press” is a less than 2 second touch of the power button. A “hold” is an over 2 second touch of the power button. To turn off the pen, **hold** (over 2 seconds) the button.
- b. The pen also has an auto-off function to save battery, so if you forget to shut off the pen, don’t sweat it, the pen will shut off on its own.



Pen is off and
screen is blank

A quick tip.....

Since these pens take time to stabilize their readings, I like to measure conductivity when I first arrive at the river. I fill the cap, attach it to the pen and either place the pen around my neck using the strap on the pen or I attach the cap and leave the pen sitting upright on the shore. After I get the conductivity reading started, I proceed with the rest of my sampling and read the conductivity result when I am done with collecting the water sample and measuring turbidity.