pH calibration

by Jim Heyen

The purpose of a pH calibration is to set your meter to be able to obtain accurate measurements for sample pH levels.

pH meters may vary but most follow the same basic rules for set up. Most meters have an automatic temperature compensation built in to accurately measure no matter the buffer temperature. Also known as ATC, you will want to check your meter to see if it has this feature.

Steps to calibrating your meter:

1) You need to select the correct normal pH readings for your operation. Mechanical plants are normally between 7.0 to 8.0 and lagoons are from 7.0 to 10.0 or even 11.0 . The reason you want your range to be at these numbers is your permits fall within these parameters.

2) To begin calibration you will need to purchase liquid pH buffers to create your low and high end of calibration. Because of ease of packaging and cost, I purchase mine from Blue Book in a bundle which gives me ph 4.0, 7.0, 10.0, and bottle of electrode storage solution (which I refer to later). There are other distributers who offer buffers and can even be purchased in powder form to mix.

3) You will need to set your lower calibration by putting enough pH buffer (normally 7.0) in the bottom of a clean container to cover the probe. Remove cover from probe, rinse tip with distilled water and wipe off with tissue paper. (Paper towel is a little harsh on the glass.) Insert probe into buffer and follow calibration instructions for probe. In most cases you will push *cal* button, allow reading to stabilize, then press *hold ent* (or may ask for *second calibration*).

4) Remove probe from first solution, rinse and wipe clean, then place into second clean container with higher buffer solution (normally 10.0). Follow same steps as above, allowing time to stabilize then hit the *cal or measurement mode* button. Again clean probe and now you are ready to measure your sample.

5) To store probe when you are finished, you will want to place a damp sponge or tissue paper (something that will soak up liquid) in the bottom of lid. You should keep the sponge damp at all times with electrode storage solution.

6) Just a reminder the pH buffers do have expiration date, so they are no longer effective after that date. They can be washed down drain with lots of water.

A simple chart (like the one below) is sufficient for recording your results.

DATE	pH 4	pH 7	pH10	Operator	Time
1/1/2010		6.9	9.9	JH	8:01 AM

Note:
sample location_____
Copy of manufacturer's pH calibration directions
Brand of pH meter _____

I would suggest you document your sample findings in a small notebook. The DEQ will request to see this information, so it is just easier to keep it all together.