

Settleable Solids

1. Fill Imhoff cone to 1 liter mark. Set aside and wait 45 minutes.
2. Take direct reading in ppm (mg/l) from scale on side of cone.

Dissolved Oxygen

1. Carefully collect the water sample into the glass water sampling bottle, avoiding trapping air bubbles or bubbling air into the sample (which may add dissolved oxygen).
ADD THE REAGENTS HOLDING THE BOTTLES VERTICAL
2. Add the next two reagents in quick succession. Add 8 drops of Manganous Sulfate Solution and 8 drops of Alkaline Potassium Iodide Azide to the sample. Cap the sample and invert several times. Wait until the precipitate settles below the neck of the bottle before proceeding.
3. Next, add 8 drops of Sulfuric Acid 1:1. Cap and gently shake until the precipitate dissolves. The solution is now fixed and may range in color from yellow to orange brown.
 - i *Fixed Solution* - Contact between the water sample and the atmosphere will not affect the test result because the dissolved oxygen has been bound into solution and no more oxygen will dissolve into the sample and no dissolved oxygen can be lost from the sample.
4. Place 20 mL of the fixed sample into the glass titration tube.
TITRATION STEPS * SWIRL AFTER EACH DROP IS ADDED *
5. Fill the titrator (small syringe) with Sodium Thiosulfate. Make sure no bubbles are in the titrator. Place the titrator into the hole in the cap of the glass titration vial or depending on which kit is used, hold the eye dropper above the fixed sample.
6. Slowly add Sodium Thiosulfate from the titrator into the sample. Continue one drop at a time until the solution turns a pale straw color.
 - i **Hint-High light intensity degrades Sodium Thiosulfate - do not allow bottle to be exposed to the sun for long periods of time.**
7. Remove the titrator cap and syringe CAREFULLY so as not to lose any of the Sodium Thiosulfate (you will continue titrating in step 9).
8. Add 8 drops of Starch Solution to the titration vial that is holding the sample. The sample will turn dark blue.
9. Continue titrating with Sodium Thiosulfate **ONE DROP AT A TIME** until the solution turns from blue to clear.
10. Read the amount of dissolved oxygen in your sample directly from the syringe (direct reading titrator). Tick marks are in 0.2 ppm. Use the tip of the syringe plunger for dissolved oxygen value.

Temperature

1. Air temperature - place thermometer in shady area and record temperature after reading stabilizes. Record temperature as EC.
2. Water temperature - take the temperature reading of the water in the shade. It is best to take the temperature reading directly in the stream, but if you can not, place thermometer directly into a bucket of sample water (in the shade) and record temperature. Take reading after temperature has stabilized (about 2 minutes). Record temperature as EC.

pH

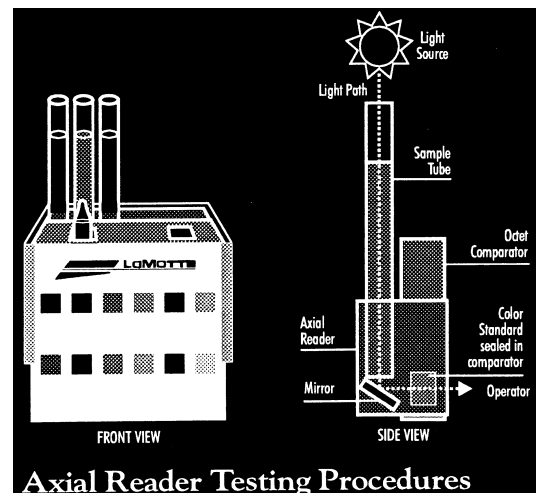
1. Fill test tube to the 5 mL line of the glass tube.
2. Add 10 drops of the pH wide range indicator (holding indicator bottle vertical). Cap and gently invert the sample several times to ensure mixing.
3. Use the color comparator box to determine pH.

Alkalinity

1. Fill titration tube to 5 mL line with water sample.
2. Add one Phenolphthalein indicator tablet/pillow into the sample. If the sample doesn't turn red, the phenolphthalein alkalinity is zero (Skip to step 4). If sample turns red, proceed to step 3.
3. If the water becomes pink, add Sulfuric Acid Standard Solution (or the Alkalinity Titration Reagent B) drop wise, counting drops, until the water becomes colorless. Test result is read where plunger tip is located at the Titrator scale (on the syringe) in ppm.
4. Add one Bromcresol Green-Methyl Red (BCG-MR) tablet to the sample and swirl to mix.
5. Using syringe, begin titrating Sulfuric Acid Standard Solution (or Alkalinity Titration Reagent B) drop wise, counting drops and swirling the sample, until the solution flashes pink and holds purple color for at least 30 seconds (the end point). If no color change occurs after the titrator is emptied, refill and continue the titration, keeping track of the amount added.
6. Once this endpoint is reached, the alkalinity is calculated. The test result is read in ppm where plunger tip is located at the titrator scale (on the syringe).

Phosphate

1. Fill 3 test tubes (one sample and two blanks) to the 10 mL mark with sample water. Place in axial reader.
2. Using 1.0 mL pipet add 1.0 mL of Phosphate Acid Reagent to sample test tube. Cap and mix.
3. Use 0.1 g spoon to add one level measure of Phosphate Reducing Reagent to sample test tube. Cap and mix until dissolved.
4. Wait 5 minutes.
5. Remove cap from test tube. Place test tube in comparator with axial reader. For accurate readings, fill 2 extra test tubes with sample water and place to the left and right of test tube sample. Insert ampoule in Octet Comparator in square hole in front of test tube sample. Slide axial reader up or down to match sample color to a color standard. (Check diagram to the right.)



Nitrate Nitrogen

1. Fill test tube to 5 mL mark with water sample.
2. Add one nitrate #1 tablet. Cap and mix until tablet disintegrates.
3. Add one nitrate #2 CTA tablet. Cap and mix until tablet disintegrates.
4. Wait 5 minutes.
5. Insert nitrate nitrogen Octa-slide bar into Octa-Slide viewer. Insert test tube into Octa-Slide viewer. Match sample color to color standard. Record as parts ppm Nitrate Nitrogen. (To convert to Nitrate, multiply results by 4.4. Record as ppm nitrate.)