Lab Report: Dissolved Oxygen

Drew H

I. Purpose

The purpose of this test is to see the level of dissolved oxygen in the stream and use this information to propose a course of action for the future.

II. Background

Dissolved oxygen is the measure of gaseous oxygen dissolved in an aqueous solution. For the stream, the dissolved oxygen level needs to be between 5mg/l and 20mg/l. Dissolved oxygen is used by organic material for decomposition, and is dictated by the temperature, salinity, and the atmospheric pressure. Temperature, though, will be the most prominent.

III. Materials

- Thermometer
- Pencil
- Data Table
- Gloves
- Manganous Sulfate Solution
- Alkaline Potassium Iodide Azide
- Sulfuric Acid, 1:1
- Sodium Thiosulfate
- Starch Indicator
- Direct Reading Titrator
- Water Sampling Bottle, 60 ml

IV. Procedure

1. Rinse the water-sampling bottle with the sample water.
2. Tightly cap the bottle, and submerge it to the desired depth.
3. Remove the cap and allow the bottle to fill.
4. Tap the sides of the bottle to dislodge any air bubbles.
5. Replace the cap while the bottle is still submerged.
6. Retrieve the bottle and make sure that no air bubbles are trapped inside.
7. Remove cap from the bottle.
8. Immediately add 8 drops of Manganous sulfate solution **and** 8 drops of Alkaline Potassium Iodide Azide.
9. Cap the bottle and mix by inverting several times. A precipitate will form.
10. Allow the precipitate to settle below the shoulder of the bottle.
11. Add 8 drops of sulfuric acid, 1:1.
12. Cap and gently invert the bottle to mix the contents until the precipitate and the reagent have totally dissolved. The solution will be clear yellow to orange if the sample contains dissolved oxygen.
13. Fill the titration tube to the 20 mL line with the fixed sample. Cap the tube.