Seawater Analysis Project – List of Experiments

Chem M3LC, UC Irvine: Fall 2019.

For the final two weeks, each lab pair will be assigned a particular type of measurement that will be used to analyze one or two types of ions in seawater. The measurement types are as follows:

1. Turbidity Measurements for Sulfate
2. Turbidity Measurements for Potassium
3. Magnesium Complexometric Fluorimetry with 8-hydroquinoline
4. EDTA titrations for Calcium and Magnesium
5. AgCl Precipitation titration for Chloride
6. Bromide Oxidation and Colorimetric Detection

Your group will be assigned one of these six measurements. You then will:

1. Determine what ion concentration range you expect to observe.
2. Explain how the technique measures these ions and with what sensitivity (this includes some web research and gathering documents/protocols; the TAs can help you).
3. Create a list of chemicals and equipment that you will need for the experiments. These lists will be compiled by the TAs and given to the stockroom.
4. Demonstrate this measurement on both artificial seawater and real samples.
5. Write a procedure document that can be used by any of your fellow classmates.

Further instructions can be found in the Labs section of the website.