

# **SMS-303: Integrative marine sciences III.**

## **Assignment #2**

You are hired by a consulting firm to study pollution in a lake in Maine which is 50m deep and 1km wide and where contaminants have been disposed off. The questions that follow are based on the mixing processes you studied in the class and lab (if you know of others, don't hesitate to add them for extra credit).

1. What mixing processes that may disperse the pollutant will you take into account and why (30pts)?
2. Which mixing processes will dominate in different seasons (30pts)?
3. What processes are likely to be more important if the contaminants are heavy and sink down to the bottom (e.g. sewage sludge) vs. if they are buoyant and float at the surface (30pts)?
4. What is the difference between stirring and mixing (10pts)?

I encourage you to study relevant material regarding the annual cycle in lakes in the library or on the WWW.