CivE 375 **Winter 2005**

Lab #3 Hints

Question 1: The summary data sheet should include all of the data in your lab book.

The Cl_2 Stock concentration should be converted to mg/mL in order to calculate the Cl_2 dosage. In order to do this, you must also account for the fact that you diluted the stock solution before you analyzed it with the HACH kit!

3 mL stock into 300 mL bottle → diluted 100x

∴ Cl_2 Stock (mg/mL) = HACH reading (mg/L) x 100 (dilution factor) ÷ 1000mL/L

You then need to calculate an average using the stock measurements from all groups. This value should be approximately 0.2 mg/mL of Cl_2.

The "Cl_2 Added (mL)" is the amount of chlorine stock solution that each group added to their samples (i.e. the numbers that were on the board).

The "Cl_2 Residual (mg/L)" is the HACH kit reading for the sample multiplied by the dilution factor (i.e. many of you diluted the sample 5x or more in the HACH cells in order to get a reading that was in range).

"Cl_2 Dosage (mg/L)" = Cl_2 Added (mL) x Cl_2 Stock Conc (mg/mL)
÷ sample volume (i.e. 300 mL) x 1 L / 1000 mL

You can then do the plot and visually determine the breakpoint dosage.

Question 2: Keep in mind that the ammonia-chlorine reaction should be predictable based on stoichiometry.

Questions 3 through 5: These are all straight-forward discussion questions worth the same number of marks each (refer to the marking scheme).