Extra Solution/Dilution Problems
CHEM 108b

1. Make 500 mL of a 61.0 ppm solution of NH$_4^+$ using NH$_4$Cl. Use that stock solution to make four NH$_4^+$ solutions with concentrations of 0.25, 0.5, 1.0 and 2.0 ppm. Make 100 mL of each of these solutions. Calculate the molar concentration of NH$_4^+$ in the stock solution.

2. Make 500 mL of a 250 ppm nitrite solution starting using NaNO$_2$. Dilute that stock solution to make four solutions of nitrite with concentrations of 0.25, 0.5, 0.75 and 1.0 ppm NO$_2^-$. Make 50 mL of each of these dilute solutions.

3. Make a 100 ppm nitrate solution starting with potassium nitrate (KNO$_3$). Make 100 mL of this stock solution and then make 3 dilute solutions of 5, 10 and 25 ppm nitrate. Make 50 mL of each of these solutions. What is the molar concentration of nitrate in the 1ppm nitrate solution?

4. Make 250 mL of a 50 ppm phosphate solution using K$_2$HPO$_4$. What is the molar concentration of phosphate in this solution? Potassium?