Memorandum

To: Professor Sills

From: Joe Stolfi

Date: September 24, 2013

Re: Results of Chlordane isotherm sorption experiment

Objective

To fit a Linear or a Freundlich model from adsorption isotherm data of chlordane and granulated activated carbon (GAC).

Methods

Sorption data consisting of dissolved chlordane concentration and adsorbed chlordane concentration was provided. The data was formed into two isotherm models using the program KaleidaGraph. The models were assessed visually to see which model best fit the data.

Results and Discussion

The Freundlich model was the model that best fit the data and it is shown in Figure 1. The model is based off of the Freundlich equation, $q = KC^{1/n}$. The q in the equation stands for the mass of adsorbate adsorbed per mass of adsorbent at equilibrium (mg / g). The K is the Freundlich isotherm soil-water partition coefficient ((mg / g) (L / mg)). The C signifies the concentration of adsorbate in the aqueous phase at equilibrium (mg / L). The 1 / n is the Freundlich isotherm intensity parameter.

The Freundlich coefficient was calculated in the graph as 2.5 ((mg / g) (L / mg)). The linear model did not fit very well with the data. It does however fit very well as a Freundlich model as shown in Figure 1.

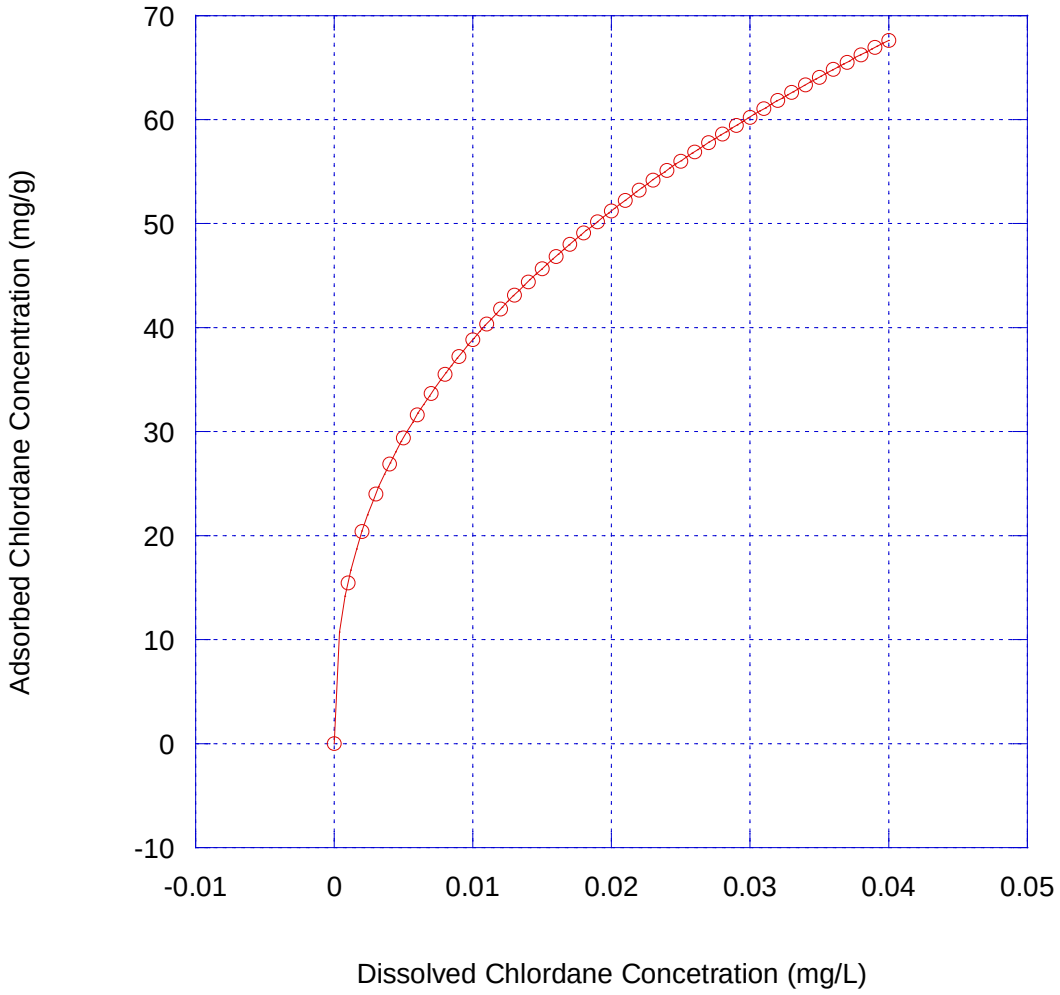

Figure 1: Adsorbed Chlordane concentration vs. Dissolved Cholordane Concentration. The circles represent data and the lines represent a Freundlich fitted model.