

# ns286

## Nadia Siles' Individual Contribution Page

### Spring 2009 Semester Contributions

During the Spring 2009 semester I worked on the CDC research team. Initially, I was working with Julia to design a non-linear chemical dose controller for chemical flow rates in excess of 400 mL/min. Knowing that the dose controller would use orifice flow in the entrance tank flow meter and in the flow controller, we used mathcad to calculate the diameter of the flexible tube based on the assumption that the bulk of the 20cm head loss needs to result from minor head losses rather than major ones. Based on these calculations and with Professor Monroe's help, I ordered the float valve and was planning to finalize the design with Julia when the direction and focus of the project changed. Given the need for a final water treatment system design for the Gracias plant, Professor Monroe asked that we focus on designing Gracias plant's entrance tank and rapid mixer. I created the initial mathcad file that calculated the energy dissipation needed at the entrance orifice of the flocculator and also calculated the size of the entrance orifice to the rapid mixer. Based on these calculations I came up with three different designs for the rapid mixer that would acquire a total loss coefficient of 1.3 or higher (to get adequate amount of global mixing). After consulting with Monroe we decided to design a rapid mixer composed of a horizontal channel and a water fall.

### Fall 2008 Contributions

I took CEE 4540 last semester (Fall 2009) and had the opportunity to go to Honduras with AguaClara this past winter break. Prior to the trip, I, along with four other students, volunteered to help set up a chemical doser at the Ojojona water treatment plant. Although we weren't able to completely set it up, we know that with the help of the on-site AguaClara engineers: Tamar Sharabi and John Erickson, it will be up and running in no time.

### Pages Created

|                              |
|------------------------------|
| Content created by Anonymous |
|------------------------------|

|                                   |
|-----------------------------------|
| There are no pages at the moment. |
|-----------------------------------|