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## Valerie Shao's Individual Contribution Page

### Spring 2016 Contributions

This semester I will be working alongside the fabrication team. In total, there are four main projects that our team will be tackling, but I will be working primarily with team member Serena Takada and Anna Doyle on the Chemical Dose Controller (CDC). Our goals for this semester include refining the design of the constant head tank design, working with the design team to create labels and scales for the various components, and working with AguaClara LLC to determine if the dose controller will be packaged and sold by AguaClara LLC or built in country. There are several properties that an ideal constant head tank should include, and these will all be taken into consideration in our designs over the course of this semester. We will also be looking into the possibility of utilizing PVC welding into the AguaClara Water Treatment Plant construction designs.

### Spring 2014 Contributions

In Spring 2014, I worked on the SRSF Theory team. As part of its ongoing research project, we ran a number of experimental trials at different PACl concentrations (0.2 mg/L, 0.65 mg/L, and 1.1 mg/L). During these trials data for the head loss, influent turbidity, and effluent turbidity were recorded over the course of a filter run under specific standards. Following this, relationships were graphed and trends were observed. Most notably, during this semester, we proved that head loss in a SRSF continues to increase linearly after filter failure, contrasting previously held hypotheses. Several theories were proposed to explain this trend, and future work will be done to prove or disprove these theories.