

# glk34

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There are no pages at the moment.

## Midterm Report

During this semester, I have been focused on two research projects: Laboratory flocculator and the Clay Pot. I have dedicated more of my time towards the laboratory flocculator than the Clay Pot, especially since the Clay Pot is just getting started. My contributions to AguaClara include:

### Laboratory Flocculator

- Contacted HF Scientific, Inc. to find out how to get the raw voltage data;
- Ran multiple "extreme" experiments iterating G at 50 NTU influent turbidity and at 10, 25, and 50 feet flocculator length. This was to determine if we are still seeing any outliers or wierd data(Caroline);
- Ran a repeated experiment ( $G=3.1$  /s, Influent Turbidity= 50 NTU, Flocculator Length=25 ft) for at least 10 times consistently to determine how much data fluctuation the experiment produces during the settling state (Caroline);
- Analyzed the data fluctuation results: Determined standard deviation within the effluent settling turbidity and graphed results; and,
- Working on a new experimental setup including the new wires for the effluent turbidimeter to achieve the analog voltage data.

### Clay Pot

All work has been done in conjunction with Cherish and Sarah.

- Creating an experimental setup that collects the filtered water into a bucket and then empties into a long tube. At the bottom of the tube, a pressure sensor is attached to monitor the pressure in the tube (and collect data to flow rate). There is also an electronic valve that is controlled by Process Controller to empty when the tube is full (after is reaches a certain pressure);
- Creating Process Controller program to collect pressure data and empty the collection tube when full;
- In the process of creating a MathCAD data collection and analysis file for the Clay Pot data; and,
- Change the experimental setup to get rid of the collection tube and collect the water in the bucket containing the clay pot. We do not need an electronic valve to empty the bucket because the water level after the pot has filtered is at a height that does not touch the pot.

## Final Report

Contributions to the Clay Pot fizzled out after the middle of the semester, as I realized that I had to put more efforts into the Tube Flocculator, and had little other time to really have the attention the Clay Pot deserved. My contributions to AguaClara for the latter part of the semester are as follows:

### Laboratory Flocculator

- Contacted HF Scientific for potential heat output caused by Turbidimeter, and finding information about the new LED lamp;
- Designed and had fabricated the new flocculator peg board setup;
- Attempted to catch PIV movie with old tube settling column to see recirculation;
- Making first tutorials on Process Controller; and,
- Developed Cleaning protocol.