

Surface vs. Subsurface Filter Detailed Task List

Summer 2013

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June 12, 2013

Literature Review

Due Wednesday, June 12, 2013 (continue research throughout session as needed)

- Familiarize with Mathcad.

Due Wednesday, June 19, 2013

- Read reports and documents of Spring 2013 team.
- Review CEE 4540 notes on filtration and other references to grasp basic theory behind filtration.

Lab Setup

Due Wednesday, June 12, 2013

- Label apparatus to facilitate experiments.

Due Wednesday, June 19, 2013

- Familiarize with current setup.
- Confirm calculations of past team.
- Run test trials with process controller.
- Compare results with past team's results.
- Modify as needed throughout session.

Experiments

Due Friday, June 21, 2013

- Decide on ranges for the independent variables of influent turbidity, influent velocity, and coagulant dosage.
- Decide on periods of time for which each experiment will be run.
- Compare with numbers used for an actual AguaClara plant.

Due Wednesday, June 26, 2013

- Run experiments using varying influent turbidities, holding all other variables constant.
- Compile data into graphs for analysis.
- Analyze and interpret results.

Due Wednesday, July 3, 2013

- Run experiments using varying influent velocities, holding all other variables constant.
- Investigate the effect of high velocities on the location of particle capture in each column.
- Compile data into graphs for analysis.
- Analyze and interpret results.

Due Wednesday, July 10, 2013

- Run experiments using varying coagulant dosages, holding all other variables constant.
- Compile data into graphs for analysis.
- Analyze and interpret results.

Due Wednesday, July 17, 2013

- Compile analysis and interpretations for all data.

Possible Modifications

Due Friday, August 26, 2013

- If time allows, improve the design of the test filter and choose the experimental parameters in such a way that they more closely mimic the actual AguaClara plants.