

Challenges Foam Filter Summer 2010

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Summary

A lot of progress was made during this semester and we are closer to building a prototype that could be tested and possibly utilized in the future in AguaClara plants.

Immediate Challenges

Learn Process Controller and Data Processor

A process controller method and data processor has been developed for this team. All new members must be trained with respect to filtration theory, process controller, and how to use data processor for experimental results.

Re-run experiment with foam column on its side

We suspect that the first one did not run correctly since the alum wasn't all used . Test to ensure that there was no aluminum hydroxide precipitation in the connections and that the dissolved concentration is appropriate. This experiment is vital and will give us an insight as to whether or not our plant design with foam socks is possible and will achieve turbidities of less than one . If there is failure again, we should continue to troubleshoot and try to ascertain the failure associated with this experiment before proceeding to build a laboratory scale model for AguaClara plants.

If tests prove to be successful for the foam column on its side, then built a prototype model

Current designs indicate that effluent water from the sedimentation tank will flow into a reservoir tank with stacked foam filter columns. Water from the sedimentation column will flow through the foam and through a slotted PVC pipe ideally delivering a clarified effluent below 1 NTU.

One important piece of this research will be to understand how to join sides of foam together and make the foam water-tight.

Another important piece of this research will involve coming up with an effective and reliable method of cleaning the foam in an AguaClara plant.