Coagulant Management

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Task List

Tasks for the Coagulant Optimization team are...

1. Coagulant Injector: Injection point should be easily serviced. The tubing should be replaceable while the plant is operating. The injection point should be in the vena contracta upstream from the macro mixing location.
   (a) Brainstorm fabrication methods for the coagulant injector (learn more about the workings of rapid mix and coagulant injection) (February 15-19)
   (b) Creation of a solid design and/or fabrication for the coagulant injector according to the research done (April 7-May 3)
2. Practical maximum coagulant concentrations and stock tank mixing
   (a) Research the chemical and physical properties and PACl and Alum (February 8-12)
   (b) Map out testing methods for this task and attain any necessary equipment (Last 2 weeks of February)
   (c) Experimentation (First 2 weeks of March)
3. Develop a hydrometer that is labeled according to the concentration of the stock solution for both Alum and PACl
   (a) Research hydrometers and review documentation from the Summer 2012 hydrometer project (February 21-26)
   (b) Test hydrometer (March 6)
4. Density measurements of PACl and Alum
   (a) Obtain density information and create a function in MathCAD to calculate the density (February 20)
5. Stock tank centrifugal pump mixing system

(a) Look over documentation from previous team (March 27)

(b) Obtain and test a centrifugal pump mixing system model (March 27-April 6)

(c) Further testing or brainstorm and test a different mixing system (April 7-May 3)