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Weiling Xu's Individual Contribution Page

Spring 2011 Contributions

I'm a member of Water Pump Team for this semester. Along with my teammates Patrick Farnham, Micheal Liu, and Dominick Amador, we are conducting research on various pump types in order to develop an efficient, inexpensive water pump used to lift water from the Aguaclara sedimentation tank to the chemical stock tank.

Throughout the semester, along with my team, I explored the possible membrane materials for the diaphragm pump, such as the inner tube from swimming or rafting tubes, or the bladder in the basketballs or soccer balls, which will have the flexibilities. However, it's difficult to get those materials, thus we explored the other materials, and found a promising materials, Santoprene.

On the other hand, I helped to construct the pumps that we needed to test, and took pictures of what we have done.

Spring 2012 Contributions

For this semester, I'm part of the team of Stacked Rapid Sand Filtration - Bench Scale. Along with my teammates, we are conducting experiments to evaluate the possibility of using smaller sand grain size and determine if there would be advantages to making such change. On the other hand, we will try to determine the solids loading capacity of the filter and understand the influence of bed depth and approach velocity. At last, we will explore addition of a very low PACL dose to improve filtration performance, with a full flocculation/sedimentation step provided upstream.

Fall 2012 Contributions

For this semester, I'm part of the Floc Filtration team. We will run experiment same as previous semester with clean water and try to figure out the reason for unequal flow was obtained even though the same setup was used for both filter columns. After we get an equal flow distribution between both filter columns, we will study the flow distribution with addition of clay and coagulant to the influent, will the flow eventually diverge or converge, for both filter with equal and unequal media. At last, we will study how does flocculation before filtration will influence the filter performance.