

Flat Foam Sheet Experiments with coagulated particles

Filter Foam Sheet Experiments with Coagulated Particles

In order to obtain conditions that better resemble those of an AguaClara plant, an alum dosing system and a rapid mix tube were added to our experimental setup. Ideally, these slightly larger and "stickier" particles are more likely to be trapped in the foam resulting, in a lower effluent turbidity.

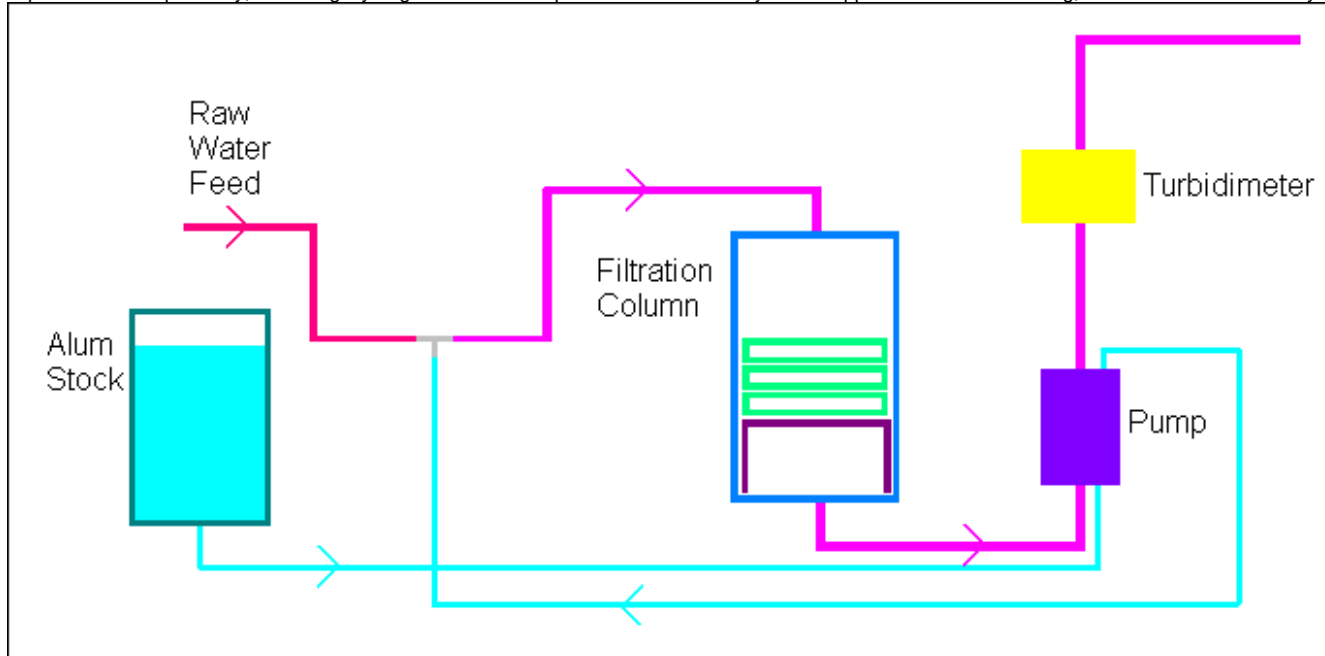


Figure 1: Experimental Setup with Alum Dose

Experiments

Experiment Set 1: Alum Dose

Preliminary experiments were run to determine if better filtration performance could be achieved after dosing 5 NTU raw water with alum.

Experiment Set 2: Depth Filtration

A series of experiments were run at a constant flow rate with a low, realistic alum dose of 1.5 mg/L in order to determine whether foam filtration acted as either a function of depth, or a function surface area.

Experiment Set 3: Horizontal Filtration

In order to optimize the plan area required for a filtration unit, we would like to be able to utilize horizontal filtration, in which raw water would flow horizontally through a vertically positioned filter. A series of experiments were run to determine if this would be possible.

Raw Water Turbidity Process

The 5 NTU raw water turbidity level was achieved using the raw water turbidity process.

[Process Controller File](#)