Pilot Plant - Flocculator

Pilot Plant Flocculation

Overview

The vertical flow hydraulic flocculation tank at the pilot plant allows the team to investigate flocculation, the process in which particles collide together and form flocs through the use of the chemical alum, in raw water. Energy dissipation created as flocs travel through system results in floc collisions and aggregation. Research has shown that as flocs grow they are more prone to shearing stresses and break apart when exposed to the same energy dissipation rates that formed them. The purpose of flocculation is to form flocs large and stable enough that they will settle out of the water when they move on to the Sedimentation Tank, producing clear, clean water.

The original set up, built by the Spring 2007 Aguaclara team, is a small scale vertical flow hydraulic flocculator similar to those built in Honduras. This flocculator has been used to examine tapered flocculation. Using tapered flocculation the flocs are exposed to high velocity gradients in the beginning of the tank and lower gradients as they travel through the tank. This summer a tube flocculator similar to the one in the Aguaclara lab was constructed, (See t ube flocculator for more information). Previously the tube flocculator experiments were only conducted with clay particles. It has be shown that organic particles in the water affect flocculation. The tube flocculator allows the team to investigate the effects of raw water on coagulation and alum dosing.

Tube Flocculator
Uniform Vertical Flow Hydraulic Flocculator

Flocculator Goals and Meeting Minutes

Goals
Meeting Minutes