

AguaClara Projects in Honduras



Cuatro Comunidades

After many long months of construction, on Tuesday March 17th, Cuatro Comunidades' basic structure was ready for the final touch, as the lamella, baffles, and accessories were installed and the tanks were filled by the hose. During the second day of operation the inflow turbidity was 4.3 NTU and the outflow turbidity was 2.3 NTU. Even with these promising results, we will continue to fine tune the plant's operation in hopes of further improvement. The plant has been in full operation since April 2nd.

Antonio Elvir, an APP technician working side by side with AguaClara engineers John Erickson and Tamar Sharabi, has been working extensively with the new operator, preparing him to effectively run the plant. Three training sessions have been completed for the water board and potential plant operators.

The four communities, or "Cuatro Comunidades," that will be served by this new plant are Rio Frio, Aldea Bonito, La Jagua, and Los Bayos, all together with a population of 2000 people. We await an inauguration for Cuatro Comunidades in the near future.

Updates & Future Projects

We have begun investigating various documentation processes for review of AguaClara plants. Hoping to gain their seal of approval on AguaClara technology, APP has been working towards forming a partnership with several different Honduran institutions. Daniel Smith, a Cornell CEE Alumnus, who worked previously on the design and construction of the Ojojona plant, has recently re-joined the team as a Fulbright Scholar. He will be working on the documentation study as well as other aspects of the project.

Due to a rising interest in AguaClara technology, our team in Honduras has been working to provide construction budgets to the communities of Gracias, Agalteca, Atima, and Santa Rosa de Copan. Working with engineer Wil Serrano, we hope to get these budgets sent out soon. The AguaClara team is anxious to monitor the operation of the new Cuatro Comunidades plant in hopes of further improving our technology.

Looking forward to next year, we expect the partnership between APP and Cornell will further strengthen as a new team of Cornell AguaClara engineers moves into Honduras.



After devoting two years to the AguaClara team in Honduras, John Erickson will be moving on to graduate studies at University of California at Berkeley. Tamar Sharabi will continue serving AguaClara in hopes of acquiring further funding for our expansion, as APP investigates NGO's in Guatemala, El Salvador, and Nicaragua to partner with and to train technicians and engineers for the construction of AguaClara plants. This summer, two new AguaClara engineers will move south to support our projects in Honduras.

AguaClara at Cornell

On the trip to Honduras this past winter, the AguaClara team discovered a new problem with some of the water treatment plants; due to excess bubbles of oxygen in the water, particulates were rising to the surface of the water in the sedimentation chamber than settling to the bottom. One research subteam is experimenting with the use of a fluidized sand filter to remove some air from the water as it enters the grit chamber. The Pilot Plant subteam is working on refining their system by revamping the baffle apparatus in the flocculation tank to allow for easier adjustments, greater variability and speed in testing. This new system allows the team to observe the turbidity profiles of many different baffle spacing configurations, and thus determine appropriate design specification for producing even cleaner water. Another subteam is currently working on computational fluid dynamics modeling of the flocculator in 3D; our final current research project examines the efficiency of plate settler spacing in the sedimentation tank. The design team is hard at work incorporating these new findings while putting the alpha release of the automated design tool online any day now!

Now, AguaClara is moving onto the next project: a plant in Gracias. The chemical dose controller subteam has designed the rapid mixer chamber for the plant so it will allow them to design a nonlinear community's needs.

For more details regarding any of the topics in this newsletter, visit our website at [HTTP://AGUACLARA.CEE.CORNELL.EDU](http://AguaClara.CEE.Cornell.edu) OR CONTACT EITHER OUR team leader or project advisor.

Sincerely,
THE AGUACLARA TEAM

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