

## **The Design, Construction, and Maintenance of a Gravity-Fed Water System in the Dominican Republic**

Niskanen, Matthew

Dominican Republic 2001-2002

Michigan Technological University – Civil & Environmental Engineering

This report describes water development in the villages of Los Arroyos and Los Botados, the Dominican Republic. This project was built together with the Peace Corps/Dominican Republic and the Catholic Mission Church of El Cercado. The methods included daily participation in the life of the community and documentation of the technical and organizational implementation on-site.

This project is a gravity-fed water system. The water used is from a naturally occurring mountain spring. A spring box was constructed to collect the water. Schedule 40 PVC pipes were used to transmit the water to the communities. A break-pressure box was constructed half-way down the mountain to reduce water pressure in the pipeline. The water exits into a 10,000 Gallon water storage tank above the community. Seventy-five homes participated in the project and each worked for a private tap in their home. Over 600 PVC pipes were used and installed in over 4.8 Kilometers (3 miles) of hand dug trench. The final cost of the water system was US\$10,175. A water committee was formed among the community leaders to manage the usage and maintenance of the project. Health talks were offered during and after the project to help promote clean and healthy living practices. This report covers all the procedure from the organizational period to the final product.