

## WATER BRIGADES PROJECT FOLLOW UP: GUARICAYAN

DATE OF FOLLOW UP VISIT: MAY 22, 2015

### System Background

Guaricayan has a gravity based water system and was completed in February , 2011. The system connects 42 houses an elementary school, one church and a community bank a chicken farm. The system consists of a reservoir dam, followed by a conduction line which drives the into the treatment tank.

### Summary of Follow-Up

Water Brigades staff and Brigaders on a Holistic Model day from Arizona State & Texas Tech University carried out the following activities during the follow-up visit on part of their exit strategy for sustainable operation of the system:



- Completed a walk-through of the system including the dam, and house connections
- Tested chlorine levels in 3 houses, one near the tank, the second in the middle of the distribution network and the third at the end.
- Held a meeting with the Water Council representative

## Observations

A small intake structure at the dam with control and cleaning valves collects the water and drives it downward towards the tank.

A 10,000 gallon size tank collects the running water (medium flow rate because of long dry season 15 gpm). Giving them consistent water supply every daily.

The visit was ill attended only by the Treasurer, and the plumber (2/7 of the council participants) and this are the results of the technical issues.

## *Technical Follow-up*

### Dam

- 15 minutes walk distance from the road to dam
- Natural spring water source (low but enough flow rate 8.6 gpm), and didn't over flow over the spillway
- Found some high amount of sediment settled in the bottom dragged by some past rain
- Haven't cleaned the dam since Jan/15



Hardness	PH	Chlorine	Nitrates	Nitrites	Pesticides	Lead
250	8.5	0.0	0.5	0.0	Negative	Negative

### Conduction line

- In optimum conditions

### Tank

- 10,000 gln storage capacity
- Chlorine levels = 0.30
- PH of 7.8
- 4 ounces of chlorine allotted to entire system and fed into main tank via drip tank on top

## House nearest main tank



The houses did have chlorine residues but little to nothing, so that means they were chlorinating but not enough, they need to increase the chlorine concentration from 4 to 8.

The Current water council meet once every 4 month, or when there is an emergency, because no significant problems have been present; and every two times a year with the community's general assembly or whenever they have to make new house connections

Each house pay 31 Lempiras per month of water tariff , Water Council is not responding at its best, plumber payment is delayed because some people pay the year tariff at once because it is hard for them to get a job, and also the president is not paying the fee and he is not setting the example for the community because there are no penalties either.

Meetings are not being held, that is a problem. President isn't establishing a schedule.

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## Recommendations and Response

GB recommends them to constantly use the correct concentration of chlorine for their health not to be endangered by harmful bacteria and parasites, and leave the tank to be full before releasing the whole content of water in it.

They should be cleaning the plant debris from the water dam to avoid bacteria attaching to the sediments that will be arriving inside the tank later and avoid it from drinking it eventually.

Keep up with the correct expenses and incomes documented. Balancing of the accounts and savings are doing fine.

We recommend them to keep up with the cleaning of the dam more often, at least twice a month during rainy season and perform weekly chlorine readings.

They also were advised in that they must start penalizing for missing payments by educating the community members on the importance of their payments to the sustainability of the project and future expansion when the sources dry out.