

2023 WEFTA-Panama Trip Report

Prologue

The WEFTA team connected a few times in November and December of 2022 to talk through priority communities for the 2023 trip. Two of the normal team members, Tomas and Leo, were unable to make the 2023 trip. Tim worked diligently to find the right person to fill in for Tomas and Leo. The choice was clear, Greg Branch, who served as the Director of the Environmental Health Program for Peace Corps (PC) from 2001 to 2007, and the main PC connection to Waterlines as far back as 2002, would be the ideal candidate for the WEFTA team. Greg's experience with gravity flow water systems, Ngäbe community organizing, Waterlines project funding and connections to Father Robert, Nicolas, Jose Molina and Tim made him an excellent person to fill in for Tomas and Leo. We were lucky he could get away for the first 10 days of the trip!

We all met Monday morning at the Hotel California in Panama City to start the trip west, stopping at communities along the way. Our travels would take us through the Coclé province, then on to the Comarca Ngäbe-Bugle on the Pacific side and the Caribbean side, then on to Bocas del Toro. Critical items for this trip were to follow-up on a few projects in motion with WEFTA funds, inaugurate four projects completed in 2022, check-in with one of the materials suppliers on our account status, connect with a few return PC volunteers (RPCVs) who happen to be in Panama working on their own projects during our trip, connect with our in-country project coordinators Nicolas and Jose, reconnect with our PC friends in the City, and meet new potential partners for water system improvements for rural Panamanians.

The trip overall was a success. We were able to meet with all of the communities we planned to and enjoy the trails in and out of the communities. The trip was a great mix of windshield time with productive conversations about the direction of WEFTA programs, hikes to and from communities full of Panama flora and fauna, and reflections on our work while enjoying the delicious Panamanian plates of food.

We are grateful to the Waterlines Sunset Fund that helps supports these post-construction follow-up trips, as well as the private donations from 2022 that support the water system improvement projects. We are also indebted to the many volunteers who have helped make our Panama water projects a success over the past many years.

Itinerary Overview (provided by WEFTA volunteer, Greg Branch):

1/8/2023

Here we go! Or not. I'm seated on the plane but it's not moving. The Captain's voice suddenly fills the airplane and states that they are fixing a glitch in the navigation system. It will be a few minutes. It seemed to me to be a good reason to wait. Glitches. Perhaps that's a big part of why I am going back to Panama. Water systems are a complicated beast. Not only technically, but socially as well. Provides potential for a lot of glitches. I'm convinced that one's ability to identify and fix glitches in life is a measure for success. My flight connection to Panama in Houston was tight and my regular threshold

regarding travel anxiety was already being tested. Fixing glitches is important and if that's what the pilot was fixing, I could wait.

I stare out the window of my parked plane. During my 17 years of living in Latin America, I've been in this situation before. It is never comfortable, and I'm reminded that few tasks are. Traveling, like water systems in Panama, take time, patience, persistence. Finally lifting off with my connection time reduced from 90 minutes to 20, I am still hopeful. My eyes return to the window. I first met Father Robert and Waterlines in January 2002. I had the unique opportunity in 2001 to start a Peace Corps program from scratch revolving around water/sanitation. Waterlines (now WEFTA) was a match made in heaven. I had volunteers that would spend two years in a rural community for the purpose of building water systems and Waterlines had some funds to buy pipe, cement, and blocks. The Yin/Yang of sustainable development was established. Now was the time to assess the success of our endeavors. I couldn't wait to get there, and I was already running late.

My wife was texting Tim Wellman telling him to hold the connecting flight to Panama for my delayed arrival. The moment I could get off my plane, I was running. Terminal C to International Terminal E. 10 minutes. I was that guy running through the airport. I rounded a corner and there he was. A dozen passengers in line left to board. I've known Tim since 1998. We were both Peace Corps Volunteers in El Salvador. I ran the Peace Corps Panama Environmental Health program from 2001 to 2007. Tim took it over in 2007, with more technical skills and experience than I had. Now the two of us were Panama bound in 2023. Planes and traffic could slow us down, but nothing could stop us now.

1/9/2023

Panama City. I shouldered my bags down to the lobby of the Hotel California. Father Robert is there, having taken the red eye flight from Mexico. My bags barely hit the floor before I could receive Robert's classic embracing hug. It was so good to see him. My last Panama Waterlines trip was in 2012 and the only thing that had changed with Father Robert was his haircut. We grabbed coffee and made our way to a water project in Buena Vista, Coclé. On the way we picked up Nicolas, one of WEFTA's best assets. A skilled Panamanian mason who can catch and direct spring water better than a Sugar Maple tree in the thaw. His construction skills are unmatched, and he is the key to getting quality work done.

The English translation of Buena Vista is "good view". This community had just that. Tropically beautiful rolling hills extended to the distant horizon. The only trouble with living on top of a mountain with good views is getting water up there. That is what we had gathered to discuss. The pipes were bursting on the bottom of the hill where the water needed to go up. Too much water pressure. Another glitch to overcome. We had a great community turnout, and the water committee had their books in order. After introductions, we hashed out problems and possible solutions. There was a material delivery mishap of the wrong PVC tubing. This is not your average "just return it to Amazon" solution. This is rural Panama. Miles up a dirt road and hours from the hardware store that misdelivered the material. Nothing we couldn't fix, but really couldn't be fixed without our intervention.

1/10/2023

With a quick trip to the hardware store in the morning to resolve the material mix-up, we set out for Quebrada Mina. The dry season was kept at bay as a raincloud opened up during our hike in. We ducked

in under a palm thatched roof to wait it out. It was a welcome shock to remember that in rural Panama, every house offers a shelter. It's raining, so you duck into whatever house is closest. Kids stare at you, plastic chairs are brought out, and the rain passes. In the U.S., you don't just walk under someone's roof to wait out the rain, you need dinner reservations or prior permission. Our community meeting was disrupted in part due to the rain, in part because a lot of the water committee was working in Costa Rica for the coffee harvest. Another glitch to overcome. Progress was made with the few people we could meet with, and we were off to Zapote 1&2.

We built the Zapote water tank with Waterlines in 2003. It was worn out. Nicolas had helped remove the old tank and the site was well prepared for the new tank construction. Lots of the community showed up and it was clear that the successful Venn diagram of WEFTA/community/Nicolas was in alignment. Zapote 2 also seemed to have promise and potential. We even found time for a quick community meeting in Nuevo Paraiso, a nearby community that came to us in need.

1/11/2023

Bajo Algodón. Almost two hours of hiking to the community and the water source. A project that stalled because of the Corona Virus Pandemic. More glitches. The community is almost done with the system but needs some more help.

We then made our way to Cerro Sombrero and Alto Caballero. Nicolas showed off his quality work and it was nice to see completion and success on those projects. A classic spring catchment to deliver water to the community and a small hospital run by the Ministry of Health, and a new water storage tank with a beautiful view. That evening, we celebrated Robert's 75th birthday at Nicolas' house. He wasn't too old to blow out the candles or eat his cake.

1/12/2023

We arrived early in Cerro Venado to meet up with Marcial and Esteban. Decades have passed since I saw them last. Alongside Nicolas, we had assembled a legacy WEFTA group of Panamanian water engineers. We went to Quebrada Arena and assessed the water system there. From there we arrived at Cerro Ceniza and made a plan for Nicolas to assess their spring box troubles.

1/13/2023

We drove over the continental divide to Bocas del Toro. We picked up Jose Molina (another huge WEFTA asset regarding capable local water engineers). We then hiked about an hour into Alto Mancreek, crossing a knee-deep river about 6 times. The only glitch of the day was Robert losing his footing and falling into the river (unharmd). Other than that, the spring box and storage tank were beautiful, and the community was proud of their work with Nicolas. A day to celebrate accomplishments. WEFTA producing success.

1/14/2003

We met with Kwite and Calante water committee members in the morning. We then met with community members at Quebrada Pastor. The community is almost twice the size of what it was when the Ministry of Health built the aqueduct years ago. Plans were made to assess more water sources and propose a future plan to expand coverage of their water system. A quick stop in Valle Risco to talk with

the school parent's association about a potential water project for the bilingual school. We were up over the continental divide to Chiriquí by sunset.

1/15/2023

Tim and I made the long drive from David to Panama City. We spent much of that time debriefing on the successes and challenges of WEFTA work in Panama. The time Tim and I had to converse over plates of food, along the trails, and in the car would make for a much longer and more detailed trip report. From philosophizing to logistical problem solving, Tim and I covered every aspect of the trip; processing the past, predicting the future, and doing what we could in the present. There are always glitches to be worked out and that's why we were there.

1/16/2023

The flight home wasn't without glitches. The plane was late leaving PTY and I missed my connecting flight in Miami. I luckily got a seat on the midnight plane to D.C. Looking out the plane window on my way home, I was pensive. I am grateful to have been able to make the Panama trip this year. It fueled the fire in my belly to keep working out the glitches in this world. Working to provide access to water for the poorest of the poor. It is not easy work, but it is worth the effort. I applaud WEFTA for all its successes and remain confident in more success to come. If anyone can handle the glitches, it is WEFTA.

Llano Nopo Area (provided by WEFTA Circuit Rider, Nicolas Arcia with Father Robert):

1/15/2023

- Llano Nopo (Roka): The water system is functioning well. They need to clean the spring capture.
- Cerro Grande (Dikori): They are asking for a spring capture reconstruction, new spring capture and pipe replacements in areas of damage.

1/16/2023

- Llano Majagua (Roka): They have submitted a solicitude to Nicolas for a new spring capture and pipe replacements.
- Alto Cienega (Peña Blanca): They have submitted a solicitude for a small family aqueduct (8 families) and a church.
- Quebrada Macho (Peña Blanca): They are asking for an inspection of the spring capture and water storage tank.

1/17/2023

- Llano Palma (Dikori): The water system is functioning well. They are soliciting assistance for a new spring capture to serve more houses.
- Alto y Bajo Arena (Dikori): The water system is functioning well. They are asking for an inspection of the spring capture and storage tank and soliciting barbed wire to fence out the spring capture.
- Buena Vista (Sitio Prado): They are soliciting a spring capture repair as well as a small family aqueduct (6 families).

Recommendations:

- Current funding will allow WEFTA to provide follow-up to some of our existing systems in the form of small repairs and renovations. We will work with in-country circuit riders: Nicolas and Jose on these small-scale projects.
- We will continue to search for other funds to perform major system improvements in the communities that have grown beyond the water supply available. These projects will consist of finding more springs sources, increasing water storage capacity, and extending distribution system water lines to the new homes. We will also work with Nicolas and Jose on these larger scale projects and may be able to utilize our Panama Return Peace Corps volunteers to assist in community training, education, and construction oversight.
- We are recommending that the WEFTA annual post-construction follow-up trip only happens every other year to conserve funds for the actual water system improvements. We suggest that Nicolas and Jose could plan for a time during non-construction season to visit other Waterlines communities to evaluate water system and water committee status and identify communities that could use a follow-up visit from the whole WEFTA team, or action for repair and renovation. Father Robert spoke with a young teacher in Llano Palma who said “your visits really nos alegre y nos anime tanto (make us happy a motivate us a lot).”
- During the final day in Panama, Tim was able to meet with a civil engineer finalizing his studies at the Panama Technical University. This contact is from the Comarca Ngäbe-Bugle and has the intention to create a National NGO dedicated to serve the rural communities of the indigenous reserve in water and sanitation needs. WEFTA could partner with this local NGO (similar to our other partnerships with local NGOs in other countries) to collaborate on further WASH circuit rider programming and continue our support of the communities we have served for the last 25+ years.
- Greg Branch highlighted a few programming opportunities for our in-country operations with Nicolas and Jose:
 - Business cards, and a WEFTA brochure on how we work/expectations to make our efforts clear to community and water committee members.
 - Branding of the WEFTA name in Panama (and perhaps other Latin America communities) – keep the old name of ‘Líneas de Agua’ from our Waterlines days as the WEFTA name does not roll off the tongue very well in Spanish.
 - Attempt to improve our relationship with the Ministry of Health (MINSA) on the certification of water systems under the MINSA regulations. It is critical to ensure that the communities where Waterlines and WEFTA have worked are up to date on their documentation and certification of the water system, water committee, spring capture, storage tanks sites, and even rights of way for water lines.
 - The decrease in rainfall amounts and frequency due to climate change has created a water supply challenge in communities that rely on rain catchment as well as spring captures that are very tied to rainfall. We have noticed spring capture and the connected water supply is decreasing in some communities. Perhaps there is funding out there to help these communities become more resilient for community water supply.

Specific Water System Details:

Date: Monday, January 19th, 2023

Location: Buena Vista, Coclé (Penonomé District)

Service Population: 169 people/36 homes

Project Details:	
Spring source	Low-profile spring-box construction, 1 spring – dry season 23 gallons/person/day, wet season 64 gpcd
Transmission Line	2.6 miles with 1 stream crossing
Storage Tank	4,600-gallon block tank
Distribution	4,550 feet of pipe with 36 connections
Project Cost:	
WL contribution	\$7,750
WEFTA contribution (2022)	\$4,100
Community contribution	\$6,800 (labor & tools)
TOTAL	\$18,650

Summary:

The WEFTA team arrived at noon in Buena Vista. The water committee and many community members were gathered at the water committee storage shed. WEFTA volunteers worked in this community in June of 2022 to help build new pressure break tanks in the distribution system and strategize repairs to the existing transmission line.

Because of the hydraulic profile from the spring to the community, the lowest point on the transmission line in the valley down below has very high pressure, the transmission line continues to break at pipe joints in this area. Looking at the design of the transmission line in the WaterSTAR for Buena Vista we saw that the transmission line is all 2" pipe except for the stream crossing at the lowest point in the valley where it necks down to 1.5" pipe. We suggested that the line from the stream crossing back up the hill to the storage tank should continue as 1.5" pipe. A short-term plan was devised to help reinforce the transmission line where the community is experiencing line breaks.

We visited the new tank and saw that it was built well including chlorinator and a perimeter fence. The community is proud of the work completed and the collaboration with Waterlines and PC.

Follow-up:

Tim is in touch with the PCV who worked in the community on this project. He and other WEFTA volunteers will be able to visit the community again in June 2023 to help with the short-term plan to reinforce the existing transmission lines issues. If our short-term plan does not work, we will need to invest in replacing the uphill side of the transmission line as noted above.

Date: Tuesday, January 10th, 2023

Location: Quebrada Mina, CNB (Muna District)

Population: 155 people/29 homes

Project Details:	
Spring source	1 spring – dry season 25 gallons/person/day, wet season 60 gpcd – is a low-profile spring-box construction
Transmission Line	1.2 miles with 1 stream crossing
Storage Tank	4,000-gallon block tank
Distribution	3,750 feet of pipe with 29 connections.
Project Cost:	
WL contribution	\$6,000
WEFTA contribution (2022)	\$1,200
Community contribution	\$5,100 (labor & tools)
TOTAL	\$12,300

Summary:

The WEFTA team arrived in the morning under a seemingly rare summer rainstorm. We visited the site of the small waterline bridge improvement project conducted by Nicolas in the mid-year of 2022. We then walked into the community to talk with a few water community members and the water committee 'vocal'. We were expecting to have a small inauguration here for the new water line bridge project. Much of the community was working in the coffee harvest and thus unable to attend the meeting. We gathered that portions of the community were not receiving water even though the spring source was in working condition and the water storage tank was full.

Follow-up:

Nicholas will return to the community in early 2023 to work with the water committee on identifying where the distribution lines may be clogged or shut-off valves may be closed. It is apparent that the water committee and trained water operator are not functioning at this point in time.

Date: Tuesday, January 10th, 2023

Location: Zapote 1&2, CNB (Mirono District)

Population: 444 people/75 homes (Zapote 1: 205 people 43 homes, Zapote 2: 239 people/32 homes)

Project Details:	
Spring source	Zapote 1: Two springs sources that provide water to the upper community with dry season issues in delivery. Nicolas constructed the springs captures as an additional project. Zapote 2: (2018 PCPP project) The PCV and community captured a spring that provides – dry season 11 gallons/person/day, wet season 46 gpcd
Transmission line	Zapote 1: No data available Zapote 2: 2100 feet

Storage Tank	Zapote 1: two tanks (2003 tank is 5,000 gallons, newer MINSA tank is also 5,000) Zapote 2: renovation of the existing 3,000-gallon tank
Distribution	Zapote 1: distribution to 43 homes Zapote 2: 9,565 feet of total pipe serving 32 homes
Project Cost:	
WL contribution	Zapote 1: \$3,000 Zapote 2 : \$5,000
Community contribution	Zapote 1: 1,100 (estimated) Zapote 2: \$3,750.00 (labor & meals)
TOTAL	Zapote 1: \$4,100 Zapote 2: \$8,750

Summary:

The WEFTA team arrived in the community of Zapote 1 in the afternoon. First, we visited the new tank site where Nicolas has been working to rebuild the old tank. The old tank was built in 2003 by a PCV with support from the community and funds from Waterlines. On our visit in 2022 we noted that the tank has lived out the projected life of a block-built storage tank – it was beyond repair. Nicolas and the community work groups have now completely dismantled the old tank and are preparing the site for a new water storage tank. We then visited with the water committee president, and some interested community members about progress on the tank project. The participants were very pleased to know they would have more water storage, especially in the summer months when the spring flows decrease.

We then travelled down to Zapote 2 to the water committee president's house. We heard from him about the status of the water system. This system was built with the assistance of a PCV in 2018 using Waterlines funds. The PCV had good community support and the system was almost completed before the PCV was evacuated due to the pandemic. The community was able to follow through with their tasks of burying the distribution lines and installing the household faucets. Unfortunately, the spring capture was not constructed to standard and is leaking a lot of water. In the rainy season the community has plenty of water, but the water committee president was weary that during the summer months there would not be enough water for everyone. He also noted that since the households are receiving water currently, there is no motivation to work on improving the spring capture. Nicolas could easily help repair the spring capture, the community contribution would be materials and labor.

Follow-up:

Zapote 1: Nicolas will work on the new tank construction in February and March of 2023.

Zapote 2: The water committee president will work with the community to gauge interest in improving the existing system. If there is enough interest, he will write a solicitation letter to Nicolas for further assistance.

Date: Tuesday, January 10th, 2023

Location: Nuevo Esperanza, CNB (Mirono District)

Population: 100 people/18 homes

No system data. New community to WEFTA.

Summary:

The community of Nuevo Esperanza is a neighbor community to Zapote 1 and the larger community of Quebrada Loro. Waterlines and WEFTA have never worked in this community. The team was asked to attend a small community meeting to talk about difficulties with their current water system. Engineers Without Borders (EWB) worked in the community in 2020 to build a small system that relied on a solar powered pump at a spring capture below the community. The pump would pump water during sunlight hours to a storage tank where the community then would be able to access the water at central taps. Unfortunately, the pump burned out recently and the community was left to haul water from the same spring-capture down below their homes. They are looking for assistance to access a spring above the community to not be reliant on another solar pumped water situation.

Follow-up:

Tim will try to contact the EWB representatives who worked in this community to follow-up on their due diligence for system sustainability. WEFTA has no plans to work with this new community.

Date: Wednesday, January 11th, 2023

Location: Bajo Algodón, CNB (Muna District)

Service Population: 175 people/35 homes

Project Details:	
Spring source	1 spring – dry season 15 gallons/person/day, wet season 25 gpcd – new low-profile spring-box construction
Transmission Line	1,250 feet
Storage Tank	5,050-gallon block tank (Completed in 2022)
Distribution	1,600 feet of pipe with 34 household connections
Project Cost:	
WL contribution	\$6,995
WEFTA contribution (2022)	\$3,000
Community contribution	\$8,336 (labor & tools)
TOTAL	\$18,331

Summary:

The WEFTA team arrived in the morning at the water committee president's house. The president informed us that the meeting would be at his house in an hour so we walked up into the community to look at another potential water source for this project. Nicolas explained that the current water source was not enough for the entire community, as well, the hydraulics of the current distribution line makes water delivery a challenge to some of the homes spread across other ridgelines. The new water source could provide water to the 10 houses on the other ridgeline while the current system could provide

water to the main stem of the community along the main ridgeline. Nicolas also noted that the community has not been able to complete portions of the distribution lines in the central community due to lack of funds/materials.

WEFTA volunteers, Hanna and Jacob, worked in the community in March of 2022 to complete the water storage tank project. Hanna was the PCV in the community working on this project with Waterlines funds when the pandemic struck, and she was evacuated. Before her departure they were able to improve the spring source with the help of Nicolas and start the construction of the supply tank. Hanna and Jacob were able to return to the community to finish the water storage tank and line out the community work groups on finishing the distribution lines to the households.

We returned to the water committee president's house for the community meeting. We were advised that there were not enough materials to complete the distribution system and thus, people were frustrated. We spoke with them about a potential path forward to ensure the distribution system is completed and the inequity in water service is alleviated.

Follow-up:

It is possible that Hanna will be able to return to the community later in 2023 to help work through the issues. WEFTA will need to find a way to ensure this project is completed. The community seems closed to having Nicolas help them finalize the items so we will need to find someone else to help facilitate the process.

Date: Wednesday, January 11th, 2023

Location: Alto Caballero, CNB (Muna District)

Total Service Population: 190 people/38 homes

Project Service Population: 60 people/ 12 homes

Project Details:	
Spring source	2- new low-profile spring captures providing 30 gallons per person per day in the dry season and 45 gpcd in the wet season to the project service population. One spring will add additional water to the main community now served by a MINSA water system. This will augment total water in the system and will provide some flow to the project service population. The second spring will directly serve the project service population.
Transmission Line	Pumped water from the spring sources will travel in two transmission lines roughly 2,500 feet each to storage tanks in the community.
Storage Tank	One existing storage tank of 5,000 gallons that serves the whole community and one new storage tank of 3,500 gallons that will service the project service population.
Distribution	Existing distribution system in the community, roughly 3,000 feet of pipe.
Project Cost:	

WEFTA contribution	\$3,500 in materials and Nicolas's labor
Community contribution	\$1,500 in local material and labor.
TOTAL	\$5,000

Summary:

The WEFTA team arrived in the adjacent community of Cerro Sombrero to visit the spring capture site. Nicolas worked here with the water committee of Cerro Sombrero and Alto Caballero to renovate the spring area. In doing so, they were able to augment the total water supply of the spring. The main portion of the spring will flow to a storage tank and be pumped up to a new tank site for Cerro Sombrero. This is not a WEFTA project, instead the community in collaboration with MINSA will complete this portion of their project. The remaining water flows by gravity to the existing tank site of the community of Alto Caballero. By augmenting the existing water supply in the existing MINSA water system of Alto Caballero there will be enough water, at times, to reach the 'project service population' which is a cluster of homes on the far end of the existing MINSA system. The other new spring capture and tank will all so provide water to this cluster of homes. We visited with the water committees of the two communities and congratulated them for their work and ability to share water from this spring site.

We then traveled to the new spring capture and tank site to inspect the work and speak with members of the 'project service population'. This project will also be a pumped water system pumping water from the new storage tank up to a storage tank (to be constructed) above the 'project service population'. Nicolas is working with this sector of the community on the design of the system, but the water committee is purchasing the pump and will be paying the electric bill.

Follow-up:

Nicholas will continue to work on this project to ensure that the project service population will in fact receive water from the new pumped system.

Date: Thursday, January 12th, 2023

Location: Quebrada Arena, CNB (District)

Service Population: 105 people/18 homes

Project Details:	
Spring source	1 spring – dry season 18 gallons/person/day, wet season 23 gpcd. Current spring source is failing due to movement of land above the source.
Transmission Line	2,000 feet
Storage Tank	4,000 gallon block tank
Distribution	1,250 feet with 18 connections
Project Cost:	
WL contribution	\$3,000
Community contribution	\$1,500
TOTAL	\$4,500

Summary:

The team arrived at the lower community of Cerro Venado to connect with previous Waterlines contractors, Marcial and Esteban. Marcial and Esteban have worked on multiple water systems in the area in collaboration with Waterlines since the late 1990s. WEFTA is working with Esteban on this small spring capture renovation project.

We then traveled up the road to the trail leading off to the spring capture site for Quebrada Arena. At the trailhead we met with the water committee members of Quebrada Arena. They were intent on finding a way to improve the spring capture. Due to recent land movement in the area, the spring capture was completely covered in soil. Esteban and the water committee members were able to uncover the original spring capture as well as create a small diversion ditch to stop the land and any runoff above the spring from falling into the spring capture. Esteban has a plan to try to stabilize the slope adjacent to and above the spring source as well as keep the spring water flowing into the capture. Nicolas also chimed in about working with Esteban on the spring capture renovation.

Follow-up:

Nicolas will follow up with Esteban on the potential to work on this small project together. If not, Tim is in contact with Esteban via WhatsApp to ensure there is a solid design moving forward.

Date: Thursday, January 12th, 2023

Location: Cerro Ceniza (main community), CNB (District)

Service Population: 300 people/45 homes/32 connections

Project Details:	
Spring source	2 low-profile spring captures, dry season 27 gallons/person/day, wet season 43 gpcd
Transmission Line	2,500-foot transmission line from the springs to the supply tank.
Storage Tank	5,000-gallon block tank
Distribution	2,250 distribution line with 32 connections, and one break-pressure tank between Cerro Ceniza and Alto Cañazas.
Project Cost:	
WL contribution	\$5,800
Community contribution	\$2,000
TOTAL	\$7,800

Summary:

The WEFTA team arrived in the afternoon under a light rain. We met with water committee members of the original system constructed in 2011 with assistance from PC and funds from Waterlines. The Cerro Ceniza and Alto Cañazas community have grown considerably since we last came here in 2018. The paved road and electrification of the area have made these communities bustling villages with a lot of movement. The views are still as brilliant as they were years ago.

There are multiple water systems in the area serving the ‘arriba’ and ‘abajo’ communities. Our intent was to focus on the main water system the serves the community along the roadway. The water committee members indicated that the number of connections to the water system has doubled, and the spring capture is leaking considerable water. The committee also indicated that similar issues exist for the other water systems in the area. The committee is still collecting water system maintenance fees per household and has funds to put towards the spring capture improvements.

Follow-up:

Nicolas will be able to work with the community later in 2023. We advised that the water committees could start to survey the whole area for water system data similar to what they worked on with the many PCVs that assisted here in the past. It is clear that in this area, and many other communities in the comarca, existing water system renovations will not solve the entire water shortage problem. Most of these communities have well outgrown the current design and water supply of the water systems they are connected to. Larger solutions must be explored, like regionalization or government-funded large water supply projects, to ensure these communities still have the critical access to water supply.

Date: Friday, January 13th, 2023

Location: Alto Mancreek, CNB (Nokribo District)

Service Population: 155 people/22 homes

Project Details:	
Spring source	1 spring – dry season 22 gallons/person/day, wet season 118 gpcd – is a low-profile spring-box construction
Transmission Line	0.33 miles with 1 stream crossing
Storage Tank	5,550-gallon block tank
Distribution	2,854 feet of pipe with 22 connections including school and church.
Project Cost:	
WL contribution	\$5,000
WEFTA contribution	\$2,000
Outside donation	\$946
Community contribution	\$5,175 (labor & tools)
TOTAL	\$13,121

Summary:

The WEFTA team arrived at noon to first talk with water committee members about the inauguration meeting planned. We brought a small ‘brindis’ (offering) of coffee and cookies for the community meeting. After a brief discussion with the water committee members and the delivery of the remaining water faucets Nicolas had promised to bring into the community, we set off to see the water storage tank, spring capture and water line stream crossings.

Nicolas worked in the community mid-year 2022 to complete the water project originally started by the PCV who was working here before the pandemic and evacuation. The PCV was working with funding

from Waterlines to complete the project, but had to leave mid-project. The PCV is still very involved with the project and in fact was in the community connecting with the people a week prior to our arrival. We were grateful that the community knew we were coming.

Our inspection of the water system attributes went well, the construction is some of Nicolas's finest, the area is beautiful. We were told that the storage tank had suffered minor cracking due to a earth tremor in December. The crack is noted, and Nicolas will be able to return to the community later in 2023 to fix the leak. We returned to the communal meeting area to be greeted by multiple community members waiting for the meeting to start. After coffee and cookies we were able to congratulate the community on their efforts and push them to ensure payment by household for the water system maintenance. The meeting had somewhat of a party atmosphere, people were very excited to finally have water in their homes.

Follow-up:

Nicolas will follow-up on the tank damage from the tremor later in 2023. It will be good to visit the community again in coming years to check in on their overall management of the system.

Date: Saturday, January 14th, 2023

Location: Quebrada Pastor, Bocas del Toro

Population: 400+ people/70+ homes/1 school with more than 500 students and staff

Project Details:	
Spring source	1 spring – dry season 22 gallons/person/day, wet season 43 gpcd
Transmission line	3,500 feet with 3 waterline bridge crossings
Storage Tank	7,500-gallon block water tank.
Distribution	3,700 feet with multiple branches to the community and the school.
Project Cost:	
WEFTA contribution	\$10,500
Community contribution	\$3,500
TOTAL	\$14,000

Summary:

This water system project has been in motion for many years. In the past, PC was active in the area with support from Waterlines for small gravity flow water systems in neighborhoods of Quebrada Pastor (Lopez, Santos, Los Laureles, Carrisal). The central community system was built many years ago by the Ministry of Health to service the school and a handful of homes above the school. The community in this area has grown considerably, and the school now is a new K-12 with more than 400 students.

On the most recent WEFTA trip in 2020, we met with the water committee of the main water system for the central part of the community including the K-12 school. Also, one of the PCVs who worked in the community was able to work on the water system design during her time at Michigan Tech University. With the engineering design, impressive community support, and a dedicated private funder for this project, WEFTA engaged with Jose Molina to coordinate the project in 2022. Nicolas and Father Robert

were able to visit the project under construction in June of 2022 to inspect the new water storage tank and spring capture. Jose was able to use much of the existing transmission lines and some of the existing distribution. The original plastic water storage tanks from the original system were transferred to just above the school to provide storage for the school from the distribution system. Tim has been in contact with Jose Molina weekly on project progress.

We arrived in the community late morning expecting another inauguration party for the water committee and water users. Instead, we were sad to find that there had been 4 recent deaths in the community so they were in mourning and would not celebrate the water system completion with us. We provided some funds for a party once the community was ready. We were still able to meet with some of the water committee to hear about the system completion and plans for further community improvements.

Follow-up:

Jose Molina is in the area and can attend to any issues encountered in the first 100 days of this system start-up. Jose will also work with the water committee on the unending quest to find additional water supply for this system. He along with the PCV have identified other spring sources in the area that could be brought to the storage tank for additional supply. The water committee also brought up some minor issues with the neighborhood systems that Jose will also be able to work on in 2023.

Date: Saturday, January 14th, 2023

Location: Centro Educativo Bilingue, Valle Risco, Bocas de Toro (District)

Service Population: 1500 student

No system data. Not a current WEFTA project.

Summary:

Early afternoon we met with members of the school parent's association. We were asked to visit this site as a favor to Jose for all of his work with WEFTA. Jose is a resident of Valle Risco and has children that attend this school. The school does not have a drop of water. Valle Risco on the large scale is suffering from drought and more water demand than supply. Although the Centro Educativo has a connection to one of the many water systems in the Valle, they do not receive water. Instead, students and teachers must bring their own water to the school for consumption and cooking.

Jose has been working with the parent's association on finding a new spring source for capture and a site for a water storage tank. The parent's association has committed local materials, cement, and labor to this potential project.

We heard from the parent's association members in attendance about the great need for water at this school site. We also heard about the general struggles of the community concerning water and sanitation. The situation is a definite challenge as a project that brings water to the school would face illegal connections to the transmission line or distribution due to the overall lack of water in the area. Also, a school only uses water during the day on weekdays and is also closed for many days through the year. The water storage tank would be overflowing in time of low/no use.

Follow-up:

Tim will work with Jose on the best possible outcome. WEFTA is not taking on new water projects and instead intends to use donor funds to help improve existing systems where Waterlines has worked with in the past.

Annual Circuit Riding Trip Panama 2023



www.vefta.net

Photos of the WEFTA team visit to multiple communities over the course of 10 days in Panama



2023 WEFTA team in Buena Vista, Coclé.



Community meeting in Buena Vista, Coclé.





Town Center, Santiago de Veraguas.



On the trail in Quebrada Mina, CNB.



Viewing the waterline bridge repair in Qbda Mina, CNB.



Water storage tank renovation site in Zapote 1, CNB.



Community meeting in Zapote 2, CNB.



Talking with the water committee president in Zapote 2, CNB, and tank investigation in Alto to Caballero, CNB.



Community meeting in Nuevo Paraiso, CNB.



On the trail to Bajo Algodón, CNB.





Water committee meeting in Bajo Algodón, CNB.



Spring capture renovation in Alto Caballero, CNB.



WEFTA team and Alto Caballero water operator.



Robert inspecting the new water tank in Alto Caballero, CNB.



On the trail in Quebrada Arena, CNB.



Viewing the spring capture renovation project in Quebrada Arena, CNB.



On the 'trail' to Alto Mancreek, CNB.



Alto Mancreek village, CNB.



Alto Manacreek, CNB.



Faucet delivery in Alto Manacreek, CNB.



Viewing the tank damage in Alto Mancreek, CNB.



View the waterline bridge in Alto Mancreek, CNB.



Viewing the spring capture in Alto Mancreek, CNB.



Water system inauguration in Alto Mancreek, CNB.



WEFTA partner, Jose Molina, explaining water system maintenance in the local language (Ngäbere), Alto Manacreek, CNB.



Water committee meeting in Quebrada Pastor, Bocas del Toro.



Viewing a spring box repair project in the Lopez sub-community of Quebrada Pastor, Bocas del Toro.



WEFTA team with WEFTA volunteer Alex in Quebrada Pastor.



Robert and Nicolas on the 3 day tour of water systems around the Llano Nopo area, CNB.



Rain during the 'dry season'.



Many thanks to our WEFTA volunteers and the Waterlines Sunset fund for making this trip possible.