



WATER ENGINEERS FOR THE AMERICAS

2010 YEAR END REPORT

EXECUTIVE SUMMARY

The non-governmental organization “Water Engineers for the Americas” (WEFTA), based in Santa Fe, New Mexico, was officially created as a non-profit 501(c)(3) in 2002. Since that time the organization has been able to assist several rural communities in developing countries throughout Latin America with their water and sanitation needs.

We have been fortunate to receive ongoing support from the Wallace Genetic Foundation to help cover operational expenses of the organization. We’ve received \$25,000 grants each of the last two years. With the ongoing support from Souder, Miller & Associate, the organization’s most significant corporate sponsor, as well as all the volunteer help from our supporters, WEFTA has been able to step up the pace when it comes to sending volunteers overseas to assess past, present and potential future projects, and provide the invaluable technical advice and recommendations needed to assure each project’s success.



Rural school washing facilities in Condoriri, Bolivia funded with a grant from Waterlines

In 2010 WEFTA was able to generate more than \$100,000 for the first time. Of course with greater revenue the organization is able to assist a greater number of communities with their water and sanitation needs. As WEFTA grows, the challenge will be to maintain a healthy level of coordination and communication with the communities served.

WEFTA continues to grow as an organization, and has been fortunate to welcome some good, new partners in this work, both institutional and individuals. The enthusiasm and special talents and insights that these new partners bring are most welcome and we are confident that they will result in healthy development and sustainable growth of the organization. One of the most promising developments has been the good and effective networking with other NGO’s, especially local in-country NGO’s that can be WEFTA’s eyes and ears on the ground, and help voice our common vision of a better world that comes from the responsible sharing of the world’s abundant resources.

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Children of Chum Cerro, Chiapas, Mexico



SITE VISITS MADE BY WEFTA VOLUNTEERS IN 2010

The following are summaries of what our volunteers observed while in-country. A detailed trip report for each is available for viewing on the WEFTA website (www.WEFTA.net).

- **Trip to Peru by Peter Fant and Lou Harrington**

In March of 2010 Pete and Lou traveled to Peru to visit several sites where WEFTA has had a history of water and wastewater system construction, as well as communities that have requested assistance with evaluating existing designs.

Pete and Lou visited a school in Tacna, in southern Peru, which intends to construct a wastewater treatment and reuse project that the school hopes to promote throughout the region as a model for reuse.

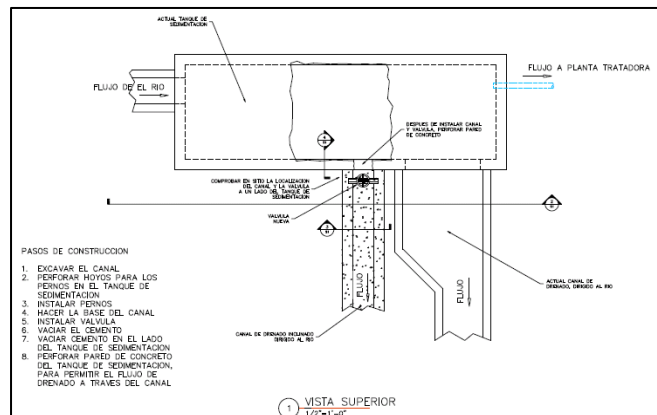
Ultimately, the school leadership would like to construct a treatment and reuse system that can be replicated elsewhere, at varying scales, and used as a sort of pilot project to promote the concept throughout the region. Hermano Cardona, of Colegio Cristo Rey, envisions having civil engineering students from the university come to the site to learn about what is possible and see with their own eyes such a system functioning. If a relatively compact, decentralized treatment system can be constructed at the school and replicated elsewhere in the valley and throughout Tacna, it may be possible to provide irrigation water for parks and landscaping along streets that are now quite limited due to the scarce water resource.



Hermano Cardona explaining the proposed wastewater treatment and reuse system at Colegio Cristo Rey in Tacna, Peru

The WEFTA volunteers also visited the nearby community of Sama/Inclan to evaluate the large water collection and treatment system being contemplated and assisted with evaluation of treatment options for arsenic removal.

They also visited the Urubamba Valley where WEFTA has constructed water and wastewater projects in the past. They were able to consult with the local contacts to determine what is needed to finalize the water and wastewater projects at the Habitat for Humanity community in the village of Urubamba. They also evaluated the water system of the neighboring community of Yucay which was having some maintenance system problems. Pete was able to develop a solution that will allow for ease of cleanout of the water system intake structure. The WEFTA volunteers were also able to visit



Proposed improved cleanout structure for Yucay water intake structure prepared by Pete to improve O&M



the school where a bathroom facility was constructed for the large 100 year old provincial school that ministers to children from all over the region.

Pete and Lou also met with local authorities in Urubamba to discuss the possibility of developing a region-wide approach to wastewater treatment and disposal and put an end to the long tradition in the valley of dumping raw sewage into the Urubamba River. That meeting was followed up by a visit with USAID officials in Lima who were able to give some leads on how such an effort may be able to succeed.

- ***Trips to Colombia by Andrew Robertson and Tory Tadano***

Andrew made two trips to Colombia during 2010 and will be returning in early 2011 to follow up on the progress made in development of a water system for the community of San Cayetano. The proposed project will be relatively large and complex by WEFTA standards, but will provide a much needed water supply to the local population. Many options have been studied, and it has been determined that the most viable and effective solution will consist of the damming of the ephemeral stream known as “El Tunel” at a point above the communities to be served, and diversion of water via an infiltration system incorporated into the dam structure. Andrew is working with several local partners, including a local engineer in the region that has experience with such structures. WEFTA hopes to have a formal proposal for the proposed project in 2011 and begin to assist in the search for funding to make the project possible.

Andrew has also been working with other communities in the region with their water systems. In some cases his work has consisted of technical advice regarding how to improve on what already exists, and in some cases the development of alternative methods of collecting and treating water to be used for consumption. These projects have been funded in great part by Lutheran World Relief, and coordinated locally by a Colombian NGO by the name of Corporación Desarrollo Solidario whose representatives have enthusiastically thanked Andrew for his support and guidance as the proposed projects are developed. These organizations had requested assistance from WEFTA in the form of technical expertise in the evaluation of the needs at each location where the organizations have been working and a study of alternative design solutions.

- ***Trip to Bolivia by Kari and Tom Edenfield***

In April of 2010, Kari and Tom Edenfield visited several past, present and potential future WEFTA project sites in Bolivia. They were accompanied on their trips by staff from the Bolivian NGO ‘Suma Jayma’ who WEFTA has worked closely with on community water projects throughout the altiplano region of Bolivia for many years.

Kari is a senior level engineer with Souder, Miller & Associates and was able to provide a critical look at all the projects and offer important insights to the Suma Jayma staff and system operators at each community, which by all accounts was much appreciated. We were especially interested in hearing what Kari had to say about the much anticipated Machacamamarca water project, which was going to be the largest WEFTA project to date both in terms of cost and scope. Upon completion, it will benefit more than 200 families in the region.





Representatives of Machacamarca Water and Sanitation Committee, Officials of the Municipal Government of Pucarani, Suma Jayma and WEFTA Representatives Machacamarca, Department of La Paz, Boliva, S.A., April 12, 2010

Kari wrote an in-depth report of what she was able to see which can be found on the WEFTA website within the ‘Trip Reports’ directory. Her report not only addresses the Machacamarca project, but all of the other communities she was able to visit during her trip. Since her return we’ve been able to provide funding for the first phase of the Machacamarca project, as well as the Cullucachi, Titin Jawira, and Condoriri projects which Kari and Tom were also able to visit.

- ***Trip to Panama by Paul Kennedy***

In January of 2010 Paul Kennedy, an engineer with Souder, Miller & Associates, was able to make a trip to Panama to visit many of the water system projects that Waterlines has helped fund over many years. WEFTA has provided volunteers with engineering backgrounds on these annual trips. Paul and the other volunteers returned with a very positive impression of the work being performed, and especially of the collaboration with the Peace Corps volunteers working throughout the region that help scope out, organize, and assist with the construction process within each community.

Paul’s trip was truly an adventure, complete with a trip in a dugout canoe to a remote village on the Rio Mananti, and included visits to approximately 20 other communities. Paul and the rest of the group he traveled with reported that conditions of the water systems visited ranged from non-functional to working smoothly. Several studies were identified for potential future water projects. The Peace Corps continues to be a great and valuable partner in the implementation of the water projects in Panama.



WEFTA/Waterlines volunteers and Peace Corps volunteers along with local population

- ***Trips to El Salvador by Jason Gehrig and follow up trip by Lupe Aragon***

In late 2009, Jason Gehrig was able to make some key site visits to communities in El Salvador and Honduras. In Honduras Jason visited with the Save the Children Honduras staff who WEFTA has worked with on several small community water system upgrade projects. The trip report Jason prepared is available on the WEFTA website.



Children of San Juan II fetching water from the spring

The site visit to the community of San Juan II in El Salvador was very productive and WEFTA was able to establish face-to-face contact with the local partners and get a good sense of the nature of the potential project. One of the most fascinating aspects of this project is that it was initiated by the owners of a large plantation adjacent to the community, Johanna and Federico Barrillas, who felt great compassion for the community members and wanted to find a way to help them freely access water from a spring on their land, or a neighbor's property, and pipe it down to the community so the women and children would not have to carry the water down the mountain on their heads and shoulders as they have for many years. Several challenges were identified, not least of which had to do with access to the preferred spring site.

Lupe Aragon of the New Mexico Rural Water Association, in collaboration with the International Rural Water Association, was able to visit the site again in mid 2010. On this trip he visited the site with colleagues from the Asociación Salvadoreña de Sistemas de Agua (ASSA) whom we believe will ultimately play a key role in seeing the construction of this project through. Since Lupe's visit we've received word from Johanna that she and her husband have come to terms with their neighbors that will make it possible for them to purchase the land where the preferred spring site is situated and that they would then be able to provide the free, unfettered access to the water from that spring in perpetuity. Funding has been secured for this project via a grant from Waterlines and we hope to see this project get underway in 2011.



Lupe Aragon (second from right) and Señora Johanna Butter de Barrillas at the spring site together with San Juan II community members and ASSA staff

WEFTA PROJECTS OF 2010

The following projects were funded and completed in 2010. Detailed final reports and accounting for each are available upon request.

- ***Chum Cerro project in Chiapas, Mexico***

The large Chum Cerro project in a remote corner of the State of Chiapas, Mexico was completed in early 2010. The project could not have been possible without the unwavering support and dedication of Kees Grotenboer, a Dutch architect who lives in San Cristobal de las Casas and played a key role in the design and implementation of the project. Ramon Lucero, a WEFTA volunteer visited the site the previous year and felt that this poor, isolated community was certainly a community in need of assistance for the proposed water system which would bring water from a spring source 1.5 miles from the community center.



Children of Chum Cerro carrying water from the spring to their homes ... a daily chore until the new water system was installed

There were many challenges to be met and the locals, along with Kees and a ‘maestro de obra’ he brought with him from San Cristobal, worked tirelessly in completing the water system. By all accounts it was a huge success. The locals no longer have to carry water from the spring every morning, and instead have access to clean, spring water at tap stands near each home.



Kees gives a hand during one of his visits to the site during construction. Without Kees’ dedication and hard work, this project probably could not have been completed.

One of the most gratifying results from Kees’ perspective was how the community worked so well together to see the project through. This is all the more impressive in this community because it is a split community of pro-Zapatista and pro-government members. People sympathetic to the Zapatista cause are usually leery, at best, to work with those that submit to and support the political parties in power. However, these differences were put aside in favor of what was best for the community, and everyone benefited. This was made possible only by the fact that the funding came from an international source.

WEFTA provided a total of \$12,870 toward the project via a donation from Waterlines.





Inauguration ceremony in Chum Cerro at the spring site



Children helping with chores ... but not hauling water

The system was officially completed and inaugurated on April 25, 2010 and, according to Kees, has been functioning well. WEFTA will hopefully be able to have a volunteer make a site visit in 2011 to assess the project, as well as several others in the region that are in need of funding and technical assistance.

- ***Bathroom facilities in Urubamba, Peru***

The director of the large provincial school in Urubamba, Peru contacted WEFTA in 2009 about the possibility of assistance with the construction of a new bathroom facility. The request was made via Linda Woodel de Ochoa, a long-time WEFTA supporter in the region who is also very involved in the school system. Linda was one of the earliest Peace Corps volunteers to Peru in the 1960's and essentially never left. She married an Urubamba local and started a family there. She has been involved in the work of WEFTA in Urubamba since the first projects there.

The school to be served by the proposed project celebrated its 100 year anniversary in 2010. The school serves 714 students that attend school in one of three turns: morning, afternoon and evening/weekends. The old bathroom facilities were in deplorable and unsafe condition. The funds used for this project were initially to be directed toward a similar school bathroom project in Puno, Peru, but ultimately were not needed when funding in Puno was secured elsewhere. The school board and local leadership in Urubamba made it clear that there was very limited local funding available, and certainly not enough to complete the project. With the funds that WEFTA provided, and especially with Linda's help, the community was able to leverage the funds in the acquisition of materials such as toilets, sinks and tiles, as well as assistance from the municipality with concrete and other masonry materials. Linda did such a good job with this that they even have a balance left over that will be used to construct other bathroom facilities at a nearby kindergarten with a similar need.



Parents of the school children help with the construction of the new bathroom facilities at their children's school



The bathrooms were completed in mid 2010 and have been in service ever since. The locals made their gratitude to WEFTA clear during Pete and Lou’s site visit, and via email messages received since final completion. WEFTA provided a total of \$7,836 toward the project of which approximately \$2,500 remains and will be used in the construction of similar facilities as described above.

The new bathroom facilities have been completed and are fully functional. Instead of the old decrepit bathrooms, a source of shame and disgust for the children of the school as well as their parents and teachers, the new facilities are shown off with pride to all visitors.

- **Phase 1 of the Machacamarca, Bolivia project**

This project would be the largest project that WEFTA has been involved in to date. The proposed project would benefit roughly 200 families with individual tap-stands at each home upon final build-out. Besides the relatively high cost, other challenges to be met included great elevation differential and the fact that the water source was a surface water source which would require special attention regarding water quality issues.



Families of Machacamarca helping with waterline installation

The Municipality of Pucarani assisted with the construction of a large water storage reservoir that would be integral to the final system. All of the locals provided all of the non-skilled labor required to trench for the waterline and excavation and backfill at the tank site and other infrastructure sites.

The project was broken into two phases for funding purposes. A private donor provided the needed funding to get the first phase completed. WEFTA hopes to complete the second and final phase in 2011.



Underground water storage tank with chlorination building on top at Machacamarca

A total of \$15,000 was provided to fund Phase 1 of the project made possible by a generous donation from an individual donor, leaving a total of \$17,400 pending for Phase 2.

Contribution from Local Community:	\$ 3,800
Contribution from Local Government:	\$ 31,200
Phase 1 funding from WEFTA:	\$ 15,000
<u>Phase 2 funding from WEFTA (pending):</u>	<u>\$ 17,400</u>
Total actual project cost:	\$ 67,400



- ***Titin Jawira, Bolivia project***

The homes of the community of Titin Jawira are quite dispersed, making the possibility of a centralized community water collection and distribution system impractical. The families have historically obtained water from open wells, taking advantage of the relatively high water table in the region. The open wells, however, were a constant safety hazard for the children and animals, and with essentially no protection from contamination. The wells would be hand dug by each family with help from neighbors and friends, and the proposed hand pumps that Suma Jayma has successfully manufactured and installed throughout the region would go a long way to improving these conditions.

The original proposal included an anticipated contribution from the Bolivian NGO by the name of Unitas, with whom WEFTA has cosponsored projects in the past. However Unitas has experienced severe funding shortfalls recently and had to back out. Fortunately WEFTA was able to find the necessary funding via Waterlines that would make this project, as well as a couple other projects possible, even without the contribution from Unitas.



Jorge and Edgar of Suma Jayma complete construction of the pump mechanism to be installed



The family of Juan Luis Balboa of Titin Jawira enjoy their new hand pump

Construction of the wells and hand pump structures began on June 13, 2010 and was completed on August 6, 2010. A total of 33 manual pumps were completed, serving a total population of 123.

Contribution from Local Community:	\$ 710
Contribution from WEFTA:	\$ 10,600
<hr/> Total actual project cost:	<hr/> \$ 11,310

- ***Cullucachi, Bolivia project***

Like the community of Titin Jawira, the best option for the families of the community of Cullucachi was to construct individual wells with hand pumps at each home. In the final report from the Suma Jayma team, they shared a little of the history of the project and the local leadership that helped make the project possible. There was an original committee headed by one of the men of the community, but after a long delay in finding the necessary funding after the Bolivian NGO 'Unitas' backed out of their initial commitment, he gave up hope. But the committee included a woman, Senora Justina Apaza, who refused to give up hope, and carried on the effort as chairwoman of what was left of the committee. Once it was apparent that the funding had finally

come through, some of the men from the original committee along with the original committee leader stepped in and said that they would see the project through. Evidently Senora Justina would have none of that and the locals stood by her and insisted that she see the project through, which she did quite effectively. According to Suma Jayma the project was a great success and the families all worked together to see all the wells dug properly and completed with fully functional hand pumps.



The family of Rosa Mamani Ticona of Cullucachi

Construction of the wells and hand pump structures began on May 17, 2010 and was completed on August 6, 2010. A total of 35 manual pumps were completed, serving a total population of 135.

Contribution from Local Community:	\$ 753
<u>Contribution from WEFTA:</u>	<u>\$ 11,172</u>
Total actual project cost:	\$ 11,925

- ***Condoriri, Bolivia project***

This relatively small project consists of the construction of a water storage tank at a spring approximately 100 meters from the school house. The tank would store spring water which would be piped to the school and to several tap stands around the school grounds with an additional tap stand for the professor who resides on the grounds and also lacks potable water. Filtration and disinfection components would be included as well. All the community members would provide the required manual labor and some local materials.

The school in Condoriri is a regional school and serves an exceedingly dispersed population. According to the Suma Jayma staff, some children must walk one to two hours to school each day.

In the original proposal, Olivia Mayta, the teacher at the school stated: “I’ve seen how the children drink water with no precautions and the saddest is that so many children live without even washing their faces. With the new water system, I will be able to help my students with better hygiene while they’re with me at school.”

Construction began on June 17, 2010 and was completed on September 11, 2010. The final construction included a spring catchment structure, a small tank, 1” waterline from the spring site to the school, and five hand washing stations with tap stands, and a separate tap stand for the teacher’s quarters. The total cost of the project was \$3,320 covered by a grant from WEFTA. The school board members and parents of the students, as well as the students themselves, provided all the labor necessary to construct the small water system.



Children at the new Condoriri school washing up at the new cleaning station



Braulio Rojas, of Suma Jayma, explained that during the inauguration celebration the community expressed great gratitude to WEFTA for making this project possible. He also mentioned that the children asked about the “gringuita” Kari and wonder when she would return with more candies and photos!



Escuela Condoriri Students

- ***Macalajau, Guatemala project***

This project is our first official collaboration with Habitat for Humanity International resulting from direct coordination with the organization’s international office for the Latin America and Caribbean region based in Costa Rica.

The village of Macalajau is a remote community within the Department of El Quiche, Guatemala, toward the northwestern border with Mexico. The majority of the population works in agriculture (corn and beans) of which most farmers earn approximately \$40/month, equivalent to approximately \$1.30/day. This income comes from the portion of the crops that they don’t keep for their own consumption. Other income comes from working as laborers on the land of others.

The project consists of the construction of latrines for each of the 89 families within the village and would serve a total population of 623 people. In the original proposal submitted by personnel from Habitat for Humanity Guatemala, they insisted that the latrines would improve the sanitary conditions of the community. The latrines would consist of a pit dug by each family to a depth of 3 meters, and sealed with a reinforced concrete cover with opening for the location of the toilet. The ventilated improved pit latrines will have a metal roof with a 3” ventilation tube.

As is the case with all WEFTA projects, the community members will be providing all of the non-skilled labor involved in the construction of the latrines. They will also provide the local wood materials needed to construct the walls of the shelter.

Total number of latrines:	89
<u>Cost of each latrine (cash):</u>	<u>\$ 145</u>
Total project cost - requested of WEFTA:	\$12,913

The construction of the latrines will be accompanied by a campaign of education and training by Habitat Guatemala staff about operation and maintenance of the latrines and other issues related to proper hygiene.



Funds were wired to the local Habitat officials in Guatemala in late 2010. Jeff Abbott, the Resource Development Coordinator for Habitat Guatemala, has indicated that construction has been moving forward on the latrines. Jeff also mentioned that he and the staff at the national office believe that there are many possibilities for meaningful collaboration between WEFTA and Habitat Guatemala that they are anxious to explore with us once we have this first project under our belts.

- ***Continuing education and training for Suma Jayma staff***

WEFTA received a request from the Suma Jayma staff for assistance with the cost of continuing education and training of their personnel, especially with the cost of engineering studies at the local university on the part of Jaime Rosas, the lead technical person at Suma Jayma. Evidently the lack of a degree and licensure as a professional engineer in Bolivia has created obstacles for the work of Suma Jayma when it comes to getting plans certified and approved.

After several conversations with Suma Jayma, it was agreed that the most prudent way to move forward with such assistance would be in the way of annual installments and subsequent reporting of how such studies are progressing. Thanks to a generous contribution of \$1,400 from a private donor, WEFTA was able to wire down to the Suma Jayma team a first installment to cover the cost of studies associated with the first year of this collaboration. For a more detailed cost breakdown, see the paragraph explaining these studies given on page 15 of the next section of this report.

UPCOMING WEFTA PROJECTS FOR 2011 AND BEYOND

BOLIVIA

- ***Machacamarca, Bolivia - Phase 2 (community water system)***

This project consists of the completion of the large Machacamarca community water project. The Suma Jayma team took the project as far as they could with Phase 1 which consists of the main infrastructure elements and main trunk line. The final phase will bring the water to each of the homes ultimately consisting of an individual tap-stand outside each home of the community.

This has been the largest project that WEFTA has been involved in to date, and will have benefited the greatest number of families by far of any previous project. The representatives of Suma Jayma have made it clear that this has been a wonderful project to be a part of and that the participation on the part of the beneficiary families has been exemplary. This is high praise coming from an organization that is used to seeing tremendous group effort when it comes to constructing these community water systems.

Finding the funding for Phase 2 of this project will be a high priority for WEFTA in 2011, and we hope to do so as early as possible.

Total project cost:	\$ 67,400
Contribution from Local Community:	\$ 3,800
Contribution from Local Government:	\$ 31,200
Phase 1 funding from WEFTA:	\$ 15,000
Total amount required to complete the project:	\$ 17,405 (cost of Phase 2)



- ***Well Drilling Equipment for Suma Jayma (drill rig)***

In an effort to become more self-sufficient and to create a sustainable model for development, Suma Jayma has requested assistance from WEFTA with the purchase of a well drilling rig. It is the belief of the Suma Jayma staff that such well drilling services could help provide the needed income to allow the organization to generate revenue and keep their staff occupied, especially while awaiting funding for the projects they're associated with.

It is still not clear what the cost of such equipment will be. Jason Gehrig has been working with Suma Jayma and some local contacts in Texas on what the best options are. WEFTA is reviewing these options with an emphasis on helping Suma Jayma find the safest and most viable solution. We hope to have a good idea of what this may entail soon and then pursue funding options to make this possible.

- ***Comanche Chico, Bolivia (community water system)***

This project was initiated in 2008 between Suma Jayma and the Municipality of Comanche for this community of 39 families. The project was designed by Suma Jayma. The municipality has completed construction of a water tank and distribution network, but the network may need some repairs and the system is lacking the individual services to homes. The community provided manual labor as well as local materials. All that is lacking are the domestic services lines, tap-stands, and some river crossings. The community is soliciting support from WEFTA to complete the project.

Contribution from Local Community (cash):	\$ 870
Contribution from Local Community (in-kind):	\$ 19,795
<u>Amount requested of WEFTA:</u>	<u>\$ 18,254</u>
Total Project Cost:	\$ 38,919

- ***Viruyo, Bolivia (community water system)***

This Project was constructed by the Municipality of Pucarani many years ago, according to the local authorities of the community. The system consisted of an elevated tank filled by a pump, but evidently the pump burned out after only about six months of service. The idea with this new proposal is to tie into the new Machacamarca system and extend service to each of the 40 homes that make up the Viruyo community, thus avoiding the need to artificially pressurize the community water system. Suma Jayma has committed to prepare a design study that will detail the scope of work, feasibility of utilizing the new infrastructure of Machacamarca, and confirm the final estimated cost.

Contribution from Local Community (cash):	\$ 893
Contribution from Local Community (in-kind):	\$ 3,548
<u>Amount requested of WEFTA:</u>	<u>\$ 13,896</u>
Total Project Cost:	\$ 18,337

- ***Huanocollo, Bolivia (community water system)***

Huanocollo is a remote traditional Aymará pueblo in the municipality of Comanche. The need is to purchase piping to construct water services to homes, some of which are 500 to 600 meters from the main network. The community will donate the manual labor to install the lines and they are hoping for a well-designed and constructed project to complete domestic installations. There are 35 homes to be reached with the new system.



Suma Jayma will verify line locations and sizes in order to run hydraulic calculations and confirm that each home can be reached with the existing system with sufficient water pressure.

Contribution from Local Government (cash):	\$ 6,000
Contribution from Local Community (cash):	\$ 521
Contribution from Local Community (in-kind):	\$ 4,200
<u>Amount requested of WEFTA:</u>	<u>\$ 13,250</u>
Total Project Cost:	\$ 23,971

- **Manual Hand Pumps, Various Communities (individual wells and hand pumps)**

Since completing the latest individual hand pump projects in 2010, Suma Jayma has received numerous additional requests for funding for such projects, specifically in Cullucachi, Munaypata and Titin Jawira. WEFTA assisted with funding of several such structures in the communities of Cullucachi and Titin Jawira, and additional families in the region have asked that we consider funding more such wells and hand pumps. If we work with the community of Munaypata, that would be our first work there.

Phase 2 of Cullucachi (31 families):

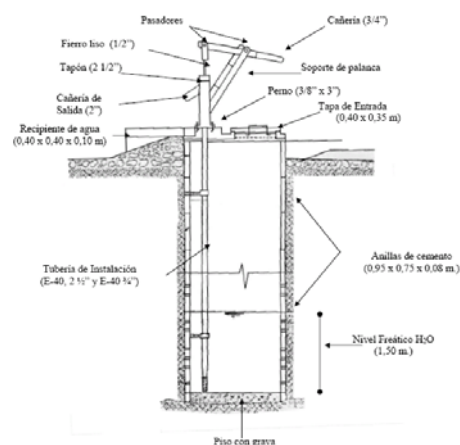
Contribution from Local Community (cash):	\$ 692
Contribution from Local Community (in-kind):	\$ 3,136
<u>Amount requested of WEFTA:</u>	<u>\$ 10,401</u>
Total Project Cost:	\$ 14,229

Community of Munaypata (22 families):

Contribution from Local Community (cash):	\$ 491
Contribution from Local Community (in-kind):	\$ 2,226
<u>Amount requested of WEFTA:</u>	<u>\$ 7,728</u>
Total Project Cost:	\$ 10,445

Phase 2 of Titin Jawira (21 families):

Contribution from Local Community (cash):	\$ 469
Contribution from Local Community (in-kind):	\$ 2,125
<u>Amount requested of WEFTA:</u>	<u>\$ 7,431</u>
Total Project Cost:	\$ 10,025



- **Ongoing Technical Development of Suma Jayma Staff**

The staff at Suma Jayma is requesting financial assistance that will make it possible for four staff members to further develop their technical expertise in the design and implementation of water and wastewater systems. The total estimated cost of the proposed studies is \$9,170 over a three-and-a-half year period, of which the Suma Jayma team is requesting approximately \$7,000 from WEFTA and proposes to cover the other costs, mostly consisting of travel to and from the institutions where the coursework is given. As discussed earlier, WEFTA has been able to assist with a first installment and hopes to be able to help Suma Jayma find the necessary funds to cover the remaining cost of these studies.

Suma Jayma Staff Member	Total	WEFTA	In-Kind (mostly travel)
Jaime Rosa Mamani	\$ 5,170	\$ 4,290	\$ 880
Jorge Rosas Mamani	\$ 1,500	\$ 1,900	\$ 600
Edgar Vargas Alanoca	\$ 1,500	\$ 900	\$ 600
Braulio Rojas Mamani	\$ 1,000	\$ 600	\$ 400
Totals:	\$ 9,170	\$ 6,990	\$ 2,180



PERU

- ***Urubamba, Peru (completion of the wastewater system and water storage tank)***

This project consists of the construction of a second septic tank next to the existing tank. The original tank was completed approximately five years ago and is nearing its capacity. With the construction of a second tank, the community will be able to isolate the first tank and divert sewage to the new tank and then allow the solids in the first tank to dry and decompose over time. It is believed that within the five year period that it takes for the tank to fill with solids that the decomposed and dried solids in the tank left offline should be relatively easier to excavate and remove.

The community has also requested assistance with the final tie-in of the new water storage tank and final completion of the tank with controls and valves.

Funding for this project has already been secured and we are awaiting final coordination with the community to move forward. We expect that Linda Ochoa will again play a key role in seeing the project move forward and assisting with the handling of finances. She has played an invaluable role for WEFTA in the region for many years.



The president of the community association, Fredy Puma Ugarte, discusses the needs related to the water and wastewater systems

Water and Wastewater System Completion for Habitat Community of Urubamba:

Estimated cost associated with secondary septic tank and tie-in:	\$ 6,100
<u>Estimated cost associated with water tank completion and tie-in:</u>	<u>\$ 3,800</u>
Total Project Cost (requested of WEFTA):	\$ 9,900

- ***Colegio Cristo Rey, Tacna, Peru (wastewater system)***

This project was discussed in the ‘Site Visits’ portion of this report. What is required of WEFTA basically consists of providing technical review services to help the school administrator know what other options are available to him when it comes to constructing the model wastewater treatment and reuse project that he has in mind.

- ***Sama Inclan, Peru (municipal water treatment system)***

We are awaiting a proposal from the local leadership in the Sama Valley regarding potential assistance with providing ideas and suggestions for treatment of drinking water. The available water contains relatively high levels of arsenic and other heavy metals. The treatment options that have been shown to the locals are prohibitively expensive, and beyond the reach of the poorer communities further up the valley from Inclan. We’ve expressed our feeling to the local leadership that there may be simpler, less costly options that would greatly reduce the levels of these unwanted constituents. They would almost certainly not do so to the levels of the more sophisticated and expensive systems, but would surely be better than no treatment at all.



- ***Urubamba Valley Wastewater Initiative (wastewater treatment and disposal)***

Representatives of WEFTA are in communication with local authorities in the Urubamba Valley, most notably the mayor of Urubamba, which is the provincial capital. The mayor, Benicio Rios, has expressed great interest in working with WEFTA in the development of wastewater treatment alternatives that can be implemented in communities up and down the river, obviously including the town of Urubamba. WEFTA will be working with Mr. Rios, along with colleagues of his in the smaller neighboring villages, in the development of a preliminary engineering report which will explore the most feasible options available, and establish guidelines for the creation of a regional entity made up of potential stakeholders throughout the valley.

MEXICO

- ***San Juan las Palmas, Chiapas (community water system)***

This is a very small community of 10 families and will consist of rudimentary rain catchment structures at each home. WEFTA has been coordinating with Dr. Gregorio de Anda of the nearby hospital in Alto Mirano. Dr. Gregorio has said, that the families of this community are among the poorest in the region and are barely surviving yet are committed to living in the homes they've established at San Juan las Palmas. Dr. Gregorio has committed to helping the families see the project through. Funding has been secured and WEFTA is now coordinating with Dr. Gregorio regarding logistics. The total cost of the project is approximately \$2,200.

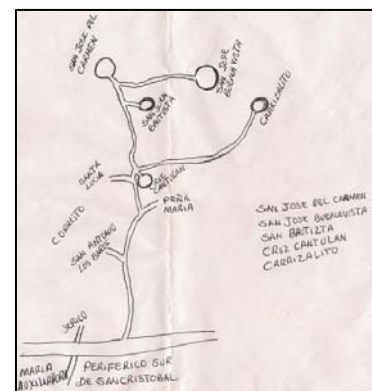
- ***Miguel Hidalgo, Chiapas (community water system)***

WEFTA has been coordinating with Mr. Kees Grootenboer, the same person who helped with the recent Chum Cerro project. Kees has prepared an initial study of the project and developed a preliminary cost estimate which is just under \$30,000. We hope to have a volunteer engineer make a trip to Chiapas in early 2011 to verify the figures and evaluate other potential projects in the region.

- ***San Jose del Carmen, Chiapas (five community water systems)***

WEFTA has been coordinating with Mr. Richard Flamer who has in turn been coordinating with local leaders from five rural communities near where he currently lives. The five communities include Cruz Cqantulan (15 families), Corralito (15 families), San Juan Bautista (12 families) San Jose del Carmen (45 families) and San Jose Buena Vista (105 families). The area where they are located is on a hillside, 10 kilometers outside of San Cristobal de Las Casas.

At the moment, there is no potable water for any of these communities. Drainage is simply directed downhill with an outhouse dug for each home. What water they have is collected from rainwater in primitive cisterns dug out and lined with plastic sheeting. Rainwater is sufficient for the crops for most years. There are no springs or wells within walking distance of the area. The communities are asking for help in drawing up a plan, and once the plan is complete they would look for funds for the materials and than proceed with building the collection tanks. The volunteer engineer to make the site visits to these communities in 2011 will certainly have a full plate when it comes to developing potential solutions.



HONDURAS

- *Barrio El Maneadero, Intibuca, Honduras (peri-urban water system)*

This project is a large project located on the outskirts of the city of Intibuca. The community is relatively large with a total population of approximately 2,000. The amount requested of WEFTA is just under \$50,000 which poses a special challenge for the organization. We will be coordinating with the representatives of Save the Children Honduras on finding ways to share the cost of the proposed project with other institutions, both local and perhaps international.

COLOMBIA

- *San Cayetano, Colombia (dam structure, water treatment and distribution system)*

Andrew Robertson has been working extensively with several local representatives in the development of a large and relatively complex project in the San Cayetano region that will benefit many homes that presently have no safe and reliable source of water. The nature of this project is discussed further in the 'Site Visits' portion of this report. As this project develops and begins to take shape, both in terms of the technical approach and final cost, WEFTA will begin the search for funding together with the local representatives.

SUMMARY FINANCIAL REPORT FOR 2010

WEFTA has been fortunate over the last year to receive very generous donations from other organizations and individuals. The organization continues to be able to rely on the countless hours provided by our volunteer professionals that make the very important site visits each year to the communities where we work. A very significant development has been the ongoing support from the Wallace Genetic Foundation to cover much of the operational expenses related to running WEFTA, especially the costs of site visits as well as the administrative support for tracking budgets and donations, and development of the website, presentation material, etc. WEFTA received an initial grant of \$25,000 from the Wallace Genetic Foundation in early 2009 and another in late 2010.

Below is a list of key contributions followed by a cash flow summary for 2010.

- *Contributions from Waterlines*

WEFTA received a \$25,092 grant from Waterlines in May of 2010, \$11,172 of which was identified as a funding source for the Cullucachi, Bolivia project, and \$10,600 for the Titin Jawira project. The grant also included \$3,320 to fund the Condoriri school project. Another grant in the amount of \$25,000 was received from Waterlines in October of 2010. Those funds were designated for the Urubamba community water and wastewater system completion projects in the amounts of \$4,256 and \$6,855 respectively, and \$12,913 for the Macalajau, Guatemala project, as well as \$2,200 for the San Juan las Palmas, Mexico project.

- *Contribution from individuals and matching grants*

Throughout 2010 WEFTA received several donations from individuals, from \$280 to a very large grant of \$15,000 to fund the first phase of the Machacamamarca community water system project.



- **Contribution from Souder, Miller & Associates**

In addition to the time donated by a number of individuals, Souder, Miller & Associates (SMA) has provided all of the administrative personnel and material necessary for the operation of WEFTA. SMA has invoiced WEFTA for the direct costs of such services, but has covered all the associated indirect costs such as benefits for personnel, all equipment and materials such as computers, office space, and all required infrastructure required by the organization. The success of WEFTA is due in large part to the continued commitment on the part of the company and individuals at SMA to support the work of WEFTA, both in terms of providing technical and managerial expertise, as well as covering a large portion of travel expenses of its employees willing to donate their time to travel to Latin America and work on projects.

- **Banking Activity for 2010**

Date	Explanation	Withdrawals	Deposits	Ending Balance
1/1/2010	beginning balance			\$ 38,445.31
1/26/2010	HP Foundation matching grant		\$ 400.00	\$ 38,845.31
2/1/2010	wire transfer to Chiapas, incl. fees (Chum Cerro)	\$ 505.00		\$ 39,245.31
3/1/2010	NMPRC filing fee	\$ 10.00		\$ 38,740.31
3/11/2010	invoice from SMA for direct expenses (1/1/09 to 12/31/09)	\$ 11,557.32		\$ 38,730.31
3/17/2010	travel expenses to Peru for WEFTA volunteer	\$ 1,337.40		\$ 27,172.99
4/12/2010	travel expenses to Bolivia for WEFTA volunteer	\$ 1,086.14		\$ 25,835.59
5/1/2010	donation from Waterlines (Titin Jawira, Cullucachi, Condoriri)		\$ 25,092.00	\$ 24,749.45
5/14/2010	wire transfer to Suma Jayma, incl. bank fees (Cullucachi)	\$ 11,226.03		\$ 49,841.45
6/2/2010	travel expenses to Peru for WEFTA volunteer	\$ 1,241.90		\$ 38,615.42
6/11/2010	wire transfer to Suma Jayma, incl. bank fees (\$10,600 for Titin Jawira + \$3,320 for Condoriri School)	\$ 13,974.03		\$ 37,373.52
6/16/2010	in-country travel expenses in Bolivia for WEFTA volunteer	\$ 101.98		\$ 23,399.49
6/21/2010	bank fees associated with transfer to Chiapas	\$ 126.03		\$ 23,297.51
7/1/2010	donation from individual (Machacamarcas - Phase 1)		\$ 15,000.00	\$ 23,171.48
7/22/2010	wire transfer to Suma Jayma, incl. bank fees (Machacamarcas - Phase 1)	\$ 15,054.09		\$ 38,171.48
9/8/2010	travel expenses to Colombia for WEFTA volunteers	\$ 1,626.40		\$ 23,117.39
9/13/2010	donation from individual		\$ 1,000.00	\$ 21,490.99
9/13/2010	donation from individual		\$ 279.00	\$ 22,490.99
9/15/2010	in-country travel expenses in Colombia for WEFTA volunteer	\$ 367.78		\$ 22,769.99
10/28/2010	donation from Waterlines (Urubamba W&WW, Macalajau, San Juan las Palmas)		\$ 25,000.00	\$ 22,402.21
11/12/2010	wire transfer to Habitat Guatemala, incl. bank fees (Macalajau)	\$ 12,940.04		\$ 47,402.21
11/12/2010	Suma Jayma website hosting/domain name renewal (3 years)	\$ 164.90		\$ 34,462.17
11/22/2010	donation from individual (Suma Jayma continuing education/training)		\$ 1,400.00	\$ 34,297.27
11/29/2010	Wallace Genetic Foundation grant (operational expenses)		\$ 25,000.00	\$ 35,697.27
12/3/2010	travel expenses to Colombia for WEFTA volunteer	\$ 964.20		\$ 60,697.27
12/9/2010	travel expenses to Bolivia for WEFTA volunteer	\$ 1,073.98		\$ 60,697.27



12/20/2010	travel expenses to Panama for WEFTA volunteer	\$ 1,330.40		\$ 59,623.29
12/20/2010	invoice from SMA for direct expenses (1/1/10 - 11/30/10)	\$ 16,904.98		\$ 58,292.89
12/21/2010	wire transfer to Suma Jayma, incl. bank fees (\$6,100 for Machacamarca - Phase 2 + \$1,400 for Suma Jayma Studies)	\$ 7,554.09		\$ 41,387.91
12/27/2010	donation from individual		\$ 964.20	\$ 33,833.82
12/31/2010	ending balance			\$ 33,833.82

Of the remaining balance, the following projects have already been identified for funding:

- \$12,500 San Juan II, Usulután, El Salvador, water system project
- \$ 2,200 San Juan las Palmas, Chiapas, Mexico, water system project
- \$ 6,100 Habitat community in Urubamba, Peru, wastewater system completion
- \$ 3,800 Habitat community in Urubamba, Peru, water storage system project

Note: A total of \$6,100 was sent to Suma Jayma in Bolivia on 12/21/10 under extenuating circumstances as an advance on the Machacamarca - Phase 2 project. This was brought about by the fact that Suma Jayma moved forward too quickly on the project with work associated with Phase 2 and purchased materials on loan. It is understood that final funding for Phase 2 of the Machacamarca project will be the total requested minus the advance funding.

GOALS FOR 2011

- ***Assist Suma Jayma, our Bolivian partner NGO, with acquisition of well drilling equipment and continuing education***

It is in the interests of WEFTA that our partner NGO in Bolivia, Suma Jayma, create a sustainable model for itself that will enable them to grow and be less reliant on donations from abroad. The capacity to drill and complete wells with such well drilling equipment would open up new possibilities for the efforts of both organizations in finding safe and reliable sources of water for the poor indigenous rural communities throughout the altiplano region.

- ***Work with local and national partners in Urubamba River Valley with regional wastewater treatment initiative***

This is an exciting and potentially very impactful initiative to address the deteriorating environmental conditions within a defined watershed in Peru. The effort will involve the development of a coalition of stakeholders within the Urubamba River Valley who all have vested interests in sustainable development and the health of the local environment, specifically addressing the water quality of the Urubamba River.

- ***Continue search for funding for new projects and expand donor base***

WEFTA will obviously continue the search for funding for the projects that our volunteers have had the opportunity to visit and confirm the feasibility and merits of each. Clearly an expansion of WEFTA's donor base would help in this effort, and will involve a more focused effort in contacting other potential donors and sharing the mission and history of WEFTA.

- ***Develop role of WEFTA in technical assistance capacity***

Promote the potential role of WEFTA with other local and international partners in providing technical review of proposed projects and even conceptual and final design development for solutions, considering the latest technologies available but always keeping in mind the appropriateness for the setting.



Instead of viewing WEFTA mostly as a funding source of water and wastewater projects, we should also promote our capacity to provide the technical review necessary to ensure any proposed project is based on solid criteria and that the proposed design represents the best option to the community, to the local and international NGO's involved, and the funder of the project. We have recently been able to see WEFTA play this role during recent site visits to Peru, Colombia and Bolivia. In preliminary discussions with personnel from Habitat for Humanity Guatemala, it is apparent that such collaboration between our organizations could result in some very strong proposals that can then be presented to potential funding sources.

- ***Organize and hold a general assembly of WEFTA board members and supporters***

WEFTA will plan for and hold another general assembly where all board members can attend, as well as key supporters and partners. The purpose of the meeting will be to evaluate where the organization is and where we hope it will go, as well as to develop a strategy for getting there.

WEFTA Board of Directors:

- Peter Fant, PE
- Lou Harrington
- Scott Rogers, PE
- Blanca Surgeon
- Jason Gehrig, PE

