

Trip Report



Hospital San Carlos

Chiapas, Mexico

Site Visit Dates: [September 12 - September 18, 2021](#)

WEFTA Volunteers: [Justin Logan & Taylor Logan](#)

Justin Logan and daughter, Taylor, are on the ground in Chiapas, Mexico to help complete the wastewater system improvements for Hospital San Carlos.

The wastewater treatment system is the final phase of the Hospital San Carlos Water Supply and Wastewater System Improvements project under our WASH in HCFs initiative.

With improved access to potable water, the Hospital staff and patients have a secure water supply free of waterborne disease. The wastewater treatment system reduces contamination and ensures the wastewater is safely treated before discharging to the river.

Hospital San Carlos is managed by the Daughters of Charity of St. Vincent de Paul. The Hospital serves the indigenous communities living in and around the Central Highlands and Eastern Mountain regions of Chiapas, Mexico, many who will travel up to 12 hours along jungle roads to reach the Hospital for medical care.



The completion of this project will positively impact the catchment population of over 20,000 lives each year!

Sunday, September 12, 2021

WEFTA volunteer engineer, Justin Logan traveled from Utah, along with his daughter, Taylor Logan to Chiapas, Mexico. Arrival to their destination was after 11pm local time. Justin and Taylor stayed with Kees Grootenboer in San Cristobal, WEFTA in-country partner and the design architect of the hospital.



Monday, September 13, 2021

The team hit the ground running, strategizing, and planning execution for the work to be done this week for the final phase of the Hospital San Carlos Water project.



They met with Sor Adela, Alberto (Hospital accountant), Alfredo (local engineer), Kees, and some of the other Sisters from the Hospital. The team reviewed the layout of the new tanks and system. Alfredo brought his level to help locate the new tanks and get a good idea of the total excavation. The existing tanks were assessed, and it was determined that 2 of them were broken and could not be used. Decision was made to proceed with the 4 remaining tanks. A rough sketch of the layout was made, and plans were made to begin cleaning up the area and excavating the next morning at 8 am.



The Sisters provided the team a nice meal with Sor Adela that evening.

Tuesday, September 14, 2021

Today was excavation day. Alfredo had a large work crew of 6 men that worked at the site all day. They began by clearing the ground and laying out the exact tank locations. They also began digging around the existing tanks that were to be moved. A load of gravel was delivered and the fence adjacent to the road was removed to allow the backhoe to enter the property. Once the backhoe arrived, excavation began and proceeded for most of the day. The holes were dug, and gravel was placed in the bottom to level out the holes, bring them up to the correct grade, and provide a good base course/foundation for the tanks.

In removing the dirt fill around the existing tanks, the workers encountered they had been partially buried in concrete. Thus, moving them was not going to be viable. Some quick math was done, and it was determined that the tanks could remain even though they would be at a slightly lower level than the other 2 tanks.

The team discussed with the electrician how the pump was to be powered from the existing electrical panel on the side of the kitchen. A trench would need to be dug for the conduit wire to the tank. A receptacle will be added at the side of the new tank so the pump can be plugged in. The electrician determined he would need to get some materials from Tuxtla to

complete the work. This is a 3-hour drive. In addition, he indicated he could also get most of the materials from Tuxtla at the same time, which included piping materials. He confirmed he could get 2" PVC piping which would better serve the installation. Over the course of the day, lists were made and changed to accommodate issues. The electrician made plans to get the pipe and fittings the next day (Wednesday 9/15) in Tuxtla, including pipe valves and fittings for penetrating the tanks.

Some additional gravel was needed for the tank foundations and for the treatment tanks.

The fence was partially restored to provide some protection for the site during the night.

It was also discovered that the collection lines would need to be found, as they were previously rerouted in the road to go a different direction. There was no indication of where they are located and how they are connected to the drains in the road. It was determined that the road will need to be cut to locate the pipes and make new connections to bring the sewage to the treatment plant.



Wednesday, September 15, 2021

The recently excavated holes accumulated water from the heavy rains overnight. The water was pumped from one of the holes and removed from the other two as well. Mud had fallen into the holes, which also needed to be removed. Additional gravel was placed in the bottom of the holes to flatten the bottom and provide a solid foundation. The tanks were rolled to the holes and placed in each hole. The tank elevations were measured and tank 2 was lowered to be at the correct elevation by removing some of the gravel. A pipe was broken during excavation the day before, so a temporary pipe was installed using pieces from the old treatment system to reroute the drain from the kitchen and laundry area. This enabled the Sisters to continue doing hospital laundry.



Thursday, September 16, 2021

Today all the tank elevations were measured to make sure the water and piping would allow the correct flow and to make sure the penetrations in the tanks were at the correct elevations. Inge Freddy and Angelica added a breaker in the existing electrical panel and ran conduit and wire down to the tank where the pump will be installed. Taylor installed caps on the smaller outlets on the tanks that can't be used, and Inge Freddy caulked them with sealant. With the hole locations verified, the tank





inlets and outlets were cut into each tank using a drill and hole saw bit.

The old piping on the existing tanks was removed and the team was able to salvage enough of the threaded 4" fasteners to use with the new 4" connectors. The remaining trenches for the piping were dug, as was the trench for the electrical conduit going to the pump. The pump was lowered into the tank and the piping from the pump was connected. Two laborers worked on the piping in the street for the entire day. They continued breaking up the concrete trying to find the pipes in the road that have been connected to the drain in the middle of the road. These pipes need to be found and rerouted to the treatment plant. The team began the complex piping associated with the 4 existing small tanks, which requires level distribution to allow equal amounts of water to get to each of the tanks. Rain started about 5pm, forcing construction to end for the day.





Friday, September 17, 2021

It rained most of the night. When the team arrived on site the tanks were floating because the rainwater had filled the holes. The water was pumped out of the holes and the tanks were repositioned. Stakes were put in the ground to hold the tanks in place until the tanks can be backfilled and have water in them.

All of the piping to and from the tanks was able to be connected. The electrical connection to the pump was finalized and the pump was tested. The electrical line was backfilled, and the green tanks were filled with gravel.

The work in the road to connect the incoming lines continued but was not completed.

WEFTA engineer, Justin, provided a training session with Pancho and the other individuals who maintain the hospital facilities, as they will most likely be maintaining the treatment plan, as well. The WEFTA team had some brief discussion with Sor Adela and others before departing in the afternoon to head back to San Cristobal.



Saturday, September 18, 2021

Justin and Taylor enjoyed breakfast with Kees and his wife, Elena. Kees drove Justin and Taylor from San Cristobal to Tuxtla, where they flew out to return home to Salt Lake City, UT.

Next Steps/Follow-up

Justin will prepare a drawing of the tank system and how the flow passes through the system. He will also provide a brief list of daily, weekly, and monthly tasks for the maintenance staff. Final tasks will be completed by the trained maintenance folks and the system will be put online. WEFTA will return to perform a post construction assessment in the coming months.

