Ferrier, Haiti

I traveled to Haiti with Hydromissions Associate, Dominic; Hydromissions Trainee Steve; and Hope for the Hungry representative, CJ. Once we landed in Haiti, we were met by our host, Jean Alix, from the Spirit of Truth Orphanage.

In addition to working with Jean Alix, we were also training Ezena Samuel (Samy) from Les Anglais, Haiti. Samy had travelled on public buses for two days to get to Ferrier for training. Samy had applied for Hydromissions to come to Les Anglais but it was after the Ferrier application had already been accepted. Since we didn't have enough time to travel across Haiti for two separate projects, we brought an extra drill kit with us and asked Samy if he was willing to come to Ferrier. I didn't have much contact with Samy prior to the trip because he had limited internet access so until Samy actually entered the orphanage, I wasn't sure if he was going to make it. What a blessing to have him! The team we trained in Ferrier spoke Creole which was a mix of mostly French words, some Spanish and a few English. Samy ended up being our primary interrupter since his English was fair and the rest of us spoke only Spanglish.

Multiple applications come into Hydromissions daily from all over the world for us to travel to villages to train and drill. Not every location is appropriate for our equipment and although the board does its best to determine which projects sites will be appropriate, we sometimes end up in places where our equipment cannot work. We knew Haiti was going to be rough because of the amount of rocks in the soil, but we also knew that Ferrier was closer to the coast with more promising soil conditions than Port-au-prince.

We stayed at the Spirit of Truth orphanage in Ferrier, but the drilling location was about 400 yards away outside of a local school and a church. Jean Alix explained that a well needed to be drilled outside of the church/school compound because they were building a security wall around the buildings. The wall would enclose an existing well that was constructed by Jean Alix for the local community and would shut them out, so the new well would replace the well in the compound. Jean Alix showed us the site he had chosen which was located 20' outside of the proposed wall and close to the road. We discovered that the wells in the area reached a clean aquifer around 100 feet in depth – which is the maximum our equipment can achieve. Salt water is typically found between 40-50 feet with layers of clay and rock between the two aquifers.

We hit the ground running as soon as we landed in Cap Haitian. We jumped in the back of a pick-up truck and scouted the local markets in search of the parts we would need to case our borehole.

Picture 1: This is how we roll in Haiti

The only PVC in the area was a poor grade. The walls for the pipe we found were very thin, but we have run into that before in other countries. It is really difficult to get locally made PVC of good quality. We still bought the PVC along with other supplies such as rope, hack saw, shovel and PVC glue. When we bought the glue, I made sure to open it up and make sure it wasn't dried out. Making that mistake in Sudan costs my team over a day in delay so I learned from my mistake and will always make sure the PVC glue is not dried out when purchased. *(Side note: On the last day, Jean Alix drove over the border into DR to get better grade PVC for the well)*

Jean Alix had arranged for a team of about six men to help us with the drilling.

Picture 2: Some of the drillers (Steve, Samy, Me, Dominic, Azemar, Dane and sitting, Chenot)

I don't know if I have ever explained the drilling process in detail is so I am going to try. This is the drilling kit we bring along on our projects. It comes in two bags, each weighing roughly 45lbs. The extension rods will pin together to reach a depth of 50' but we can bring more extensions to reach a maximum depth of 100'.

Picture 3: EXP-50 Drill Kit

The drill bit shown above comes in two different types. (1) regular auger bit and (2) sand auger bit. We change those bits throughout the borehole drilling process depending on

whether the soil is loose and sandy or sticky clay. We drill down until the bucket on the auger is filled, after which we pull the unit out, dump the soil and drop it back down into the hole. It is a slow process especially when the borehole gets deep. Steve timed us once when we were around 50' deep and I think it took about 8 - 10 minutes just to pull out the drill, disassemble, reassemble and lower back down into the hole.


Pictures 4 & 5: Drilling (notice the Tom's shoes on Azemar!)

Imagine digging over 50' down but only pulling out increments of soil in the amount you can fit roughly inside a 2-liter soda bottle. It can be really tedious, but it works!

We knew we had to drill down to a depth of 100' and we knew it wasn't going to be easy. Sometimes we are in countries where people do not want to work all day, every day – sometimes it is the hot weather that limits how many hours we can work, sometimes it is lack of people. We were really blessed that the guys we were working with had the determination and stamina to work from sun-up to sun-down every day. The guys that were working with us were from the local church. They had a really great attitude and made the experience a lot of fun. There is always a language barrier but between the Spanglish and Samy, we were able to joke around and lighten up the day.

Picture 6: A crowd gathers to watch us drill

The first hard part of the project was deciding when to spend time trying to drill through an obstacle and when to move on to a new location. Because we knew we had to go so deep, when we ran into rocks as early as 8', we had to make choices on how long to work at trying to move past the rocks. We worked at the first rock obstacle for a little over an hour before deciding to move the drill a few feet away and start again. When we ran into more loose rocks at around the same depth at hole #2, we decided to keep working but also start another hole with Samy's drill kit a few feet in the other direction. We split up the guys and drilled two holes simultaneously knowing that we would stick to whichever one was more promising by the end of the day. After a couple hours of struggling at what was bore hole location #3, we decided to focus our efforts on location #2 since we had made it a few feet further and actually got past some of the rocks.

Picture 7: These rocks don't look very big but they are big enough to hinder our drilling efforts. We were eventually able to scope these little guys out of the hole!

The drilling was painstakingly slow and difficult. Once we got down around 50', it was taking hours to move only a foot.

Picture 8: Drilling on the second to last day

We had hit the first aquifer at 49' and the locals were really excited. We had to explain that we needed to drill pass the water, through more difficult soil, to get to the clean water. It was sort of a bummer to explain to the guys who were working hard, obviously tired and sore, that we needed to go another 50'! We tasted the water to check (I just swished it in my mouth and spit it out) and it was salty. The locals said that the other well water was salty also. This led to a delay because we were trying to find out if the well we were replacing was clean or salty. Some people said it was salty and only used for washing and cooking. Other people said they drank from the well. I could ask the same person the same question and get two different answers because they often try to tell you what they think we want to hear or what will help their case. I finally went to the existing well water and swished that in my mouth. It wasn't salty but it did have a poor taste to it.

Picture 9: Existing well with school and church in background

On Thursday, which was our second to last day of drilling, we spent over 4 hours and only progressed 1 foot. For 4 hours we dropped the drill down to a depth of 55.5' and did our best to rotate it but the clay was so stiff and sticky, we could hardly scrap inches off the very top.

Picture 10: Sticky mess

We'd spend a few minutes pulling the bit out in hopes that the bucket would be full, but it would be empty and we'd reassemble it and try again.

Picture 11: The drill was so tough to turn and lift that we had to fit as many hands on the drill as possible

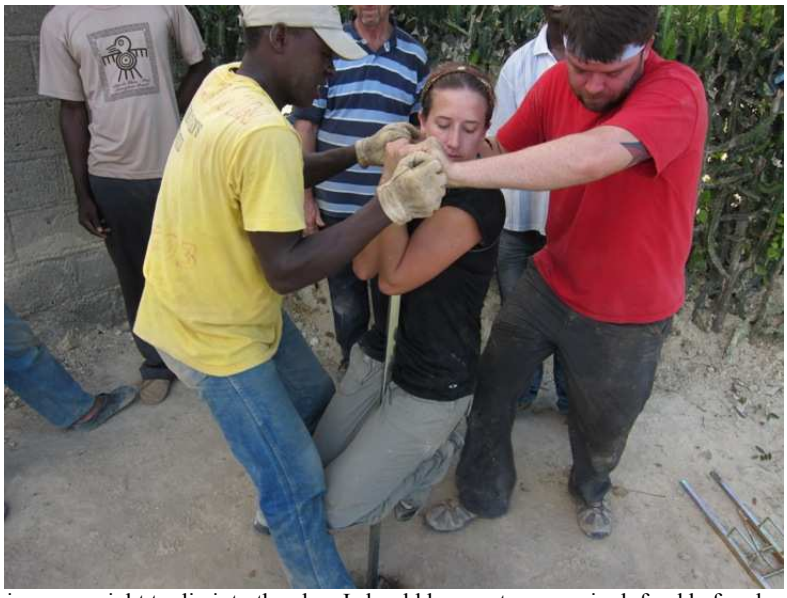
By the end of the night, my teammates and I got together to try to figure out what to do with the project. We didn't want to leave the borehole as it was – there was water in it but it was salty and it wasn't as deep as it needed to be. Jean Alix wanted to install a

hand pump in the well we were drilling. India Mark II pumps were used all over Ferrier, common enough for maintenance and repair. The problem we faced was that the depth we reached by Thursday night was still 40' shy of our mark. We knew that there was very little chance we could make it 40' in the last 12 hours we had for drilling in Haiti on Friday, We spent a lot of time talking about different scenarios. We didn't want to call it quits because, although we knew we probably couldn't gain much depth the following day, we didn't want to quit and discourage the people we were training. If we quit, there was a good chance we'd leave Haiti and our equipment would get tucked in a corner and never get used. We had to make sure we left the guys in the community with knowledge of when the equipment is appropriate and what modifications can be made to make it work better in their particular scenario. Just like in Nepal, we tried some simple modifications to help pull up small rocks. We had an angle welded to one of the extension rod collars and we'd drop it down into the hole to try to pry up the rocks that were blocking our auger.

Picture 12: Welded angle for prying rocks out

On Thursday night, we decided that we were going to start drilling again as soon as it was light and work for half a day. We decided to determine the outcome of the well by noon on Friday and spend the remainder of the day teaching the locals about soils, surface water, groundwater, pump maintenance and try to answer any questions they had about drilling. On Friday morning, I woke up optimistically thinking we might just pull it off! I was hoping that maybe we only had a couple feet to go of the difficult clay layer and we'd break through to perfect gravelly sand and by the afternoon, we'd have a 100' deep working well! With that in mind, we were at the site before it was light enough to even see the hole and prepared for our last day of drilling. A few hours later, having moved

only about a foot deeper, brought my optimistic mind back to the reality of the situation. We were not going to make it to 100' with our equipment.



Picture 13: Using my weight to dig into the clay. I should have eaten more junk food before heading to Haiti!

We went to talk to Jean Alix about the situation and he was on the phone with a local drill rig before we even finished our explanation. Jean Alix said our equipment worked far better then he expected it to and he was going to guide the group of guys we were training to some different areas where he knew the clean water table was higher for the next drilling project.

Jean Alix opened a classroom for us since the kids happen to be off of school on Friday. Having a classroom was awesome! Steve and Dominic spent a few hours teaching class to our drill team. It was really awesome to get a chance to draw out illustrations and explain everything we could think of about soils, water and pumps. While they were teaching, I brought over all of the pump parts and a bucket of water to demonstrate how the pump worked. After we were done, we asked the guys to go up to the boards and re-teach it to us (along with drawing the parts of a well, soil layers and pump). We felt really confident that they understood everything we went over with them during class and would make great drillers for future projects.

Picture 14: Drilling 101

While class was in session, the commercial drill rig showed up. It took a few hours for the drill to dig down the remaining 40' – I actually felt a little bit better when the HUGE drill spent about 30 minutes stuck in one spot due to rocks. I knew after watching that there was no way we would have been able to break through with our equipment even if we had additional days and revived manpower. Jean Alix said the cost for drilling a well in Ferrier was $3000. Since we only needed them to drill 40' (and we had the casing, filter stone, etc), it was only going to cost around $800.

Picture 15: Local Drillers

We usually get the kids in the community to help us by collecting small rocks which we use as a filter between the borehole walls and the casing pipe. Earlier in the week, a group of kids collected 3- 5 gallon buckets of rocks the size of their finger nails. That amount would typically be enough for the size hole we were drilling with our equipment. Unfortunately, the drill on the rig was wider and made a bigger diameter hole which

required more filter stone. Collecting the stone is tedious and time consuming. We didn't know until later in the afternoon on Friday that we needed about 10- 5 gallon buckets! I had been working on one bucket for nearly two hours in a yard nearby when I heard the news about needing a whole lot more.

Picture 16: I am sorting rocks near the drill site

After I finished my bucket, I started to carry it out towards the borehole. What I didn't realize was how slippery the mud was between me and my destination. I must have looked like a cartoon character as I slipped and twisted in an attempt to save myself, but most importantly - my 5-gallon bucket! The filter rocks and I didn't make it… I spilled out nearly 3/4th of the bucket and landed right on my backside in the slippery mud. I picked up what I could dig out and trudged away with ¾ of a bucket of stones, slightly cranky, sore and muddy. I rinsed out the rocks, my bucket (and myself) the best I could and then found the rest of my teammates sifting stones at Jean Alix's construction site.

Picture 17: Steve is sifting the rocks to get the right size to use as filter stone

We were totally saved by the pile of gravel Jean Alix had stocked for a pig pen project he was working on with another group of men. We were able to use their screen and rocks to complete our remaining 6 ¼ buckets!

(Side note: Jean Alix was a very cool pastor to work with in Haiti. He was very driven to help those in need, but not with just a few things – with everything! He built orphanages, schools, churches and whatever else might be helpful. Everything he built was solid – much better construction then I typically witness in undeveloped areas. For example, the school and orphanage he had constructed near the earthquake zone had minor damage compared to the surrounding buildings. It just shows his character in taking care to build things right even though others were taking shortcuts. The pig pen he was building with another team of locals was for the pastor of the church in Ferrier. Jean Alix wanted to help the pastor support himself and his family so he is providing a place for the pastor to raise pigs.)

Picture 18: School built by Jean Alix

The local contractors finished drilling towards the end of the day. We had finished collecting all of the filter stone but there wasn't any time to install the pump. We did feel confident that the lessons we taught about the pump and how to maintain and fix it were understood by the locals we trained. In addition, the man who sold Jean Alix the pump said he would install it for free so we were not very stressed by the fact that we couldn't be there for installation.

After the truck left, we covered the well with some rocks and gathered everyone around to pray and thank God for providing.

Picture 19: Thanking God for providing water

There were a lot of people who would be attracted to what we were doing and just sit and watch us throughout the drilling process. When Jean Alix, CJ, and the rest of the team gathered around the new well, others who were just curios followed. Those locals got to hear Jean Alix explain who we were, who he was and what was being done in the name of Jesus for the community. He also prayed and thanked God for providing water for the community. It was a good way for Jean Alix to be able to share the love of Christ with people who wouldn't normally go to a church. Ferrier, like most of Haiti, consists of many people who practice voodoo. CJ, who had spent time in Ferrier years ago, said he used to be able to hear the voodoo drums going all night. We didn't hear them at all during our trip. The local church in Ferrier is 300 people strong in a community of about three thousand. There wouldn't even be a church if a few Haitian pastors didn't leave their homes on the other side of Haiti to serve in Ferrier as missionaries in their own country. Those men took their families and settled in an area poorer then the one they grew up in to serve the needs of those around them. It was so cool to witness these Haitian families who sacrificed a lot to help their fellow Haitians.

Picture 20: Typical house in Ferrier

In summary, our project was a success. We trained and equipped two teams. The team in Ferrier and Samy, who will take the equipment and knowledge back to Les Anglais. I was really encouraged by the good work Jean Alix is doing in Ferrier. The orphanage we stayed in was a happy and joyful place. The girls were often singing, playing and laughing. The orphanage is on its second generation of girls and it managed by a woman who grew up in it herself years ago. My roommate was a 30 year old woman who also grew up in the orphanage. Now she is a nurse and works in a clinic nearby. It was great to see the love of Christ shine throughout the orphanage. It was great to see Jean Alix, a very busy man, taking time to sing and joke with the children.

My focus since returning from my 3-part adventure is figuring out what I am going to do next. I have some water projects that are in the works but I am hopeful that something bigger is going to come about next year. The training I have taken so far and the additional training I will take next spring, along with all the field experience I am getting on these short projects is building up to me serving for longer periods overseas. I have goals but I also know that I need to be certain of my path before I jump. Some verses that are giving me encouragement right now as I consider my future are (1) Philippians 1:6 "And I am certain that God, who began the good work within you, will continue his work until it is finally finished on the day when Christ Jesus returns." And (2) Jeremiah 29:11 "For I know the plans I have for you," says the Lord. "They are plans for good and not for disaster, to give you a future and a hope." I am going to continue to work towards my goals but not rush until I know for sure where I should be heading. I know God is going to continue to mold me into the person He wants me to be and I plan on continuing to serve wherever I can – here in my community and overseas. I want to make a difference in people's lives that will direct them to a God that loves them more then they could ever imagine. Below are a few verses of a song I really like – especially the part that goes "Why don't you break my heart 'til it moves my hands and feet" I want to always move my hands and feet to serve those in need. I hope that my stories encourage you all to help those around you as well. You don't need to travel half-way round the world to touch someone's heart.

LOVE COME TO LIFE

I've been restless on the inside
wondering about this heart of mine
I've been desperately trying to find
a way to prove that I'm still alive
Has the love I speak so loudly of
quietly grown cold

Is my life been an empty voice
what I sing needs to be seen
I need to step out and make the choice
to let go of everything

Would you reignite this heart spark here in the dark

Bring your love to life inside of me
Why don't you break my heart 'til it moves my hands and feet

For the hopeless and the broken
for the ones that don't know that you love them
Bring your love to life inside of me

The generation you're calling out
living everything we sing about
The revelation right here and now
love beyond the shadow of the doubt
Love that is greater than our own
won't remain unknown

When you bring your love to life inside of me
Why don't you break my heart 'til it moves my hands and feet