

Water supply for Poblaki school in Mae Sot

We get a request from the Border Green Energy Team (BGET) based in Mae Sot to provide a school with about 80 children with water for the sanitation facilities.

The challenge there was the area it's about 3 hours away from the next bigger village, only reachable with a 4 wheel truck. There was just solar power available and gasoline hard to carry that far. The decision for an alternate pumping system was indispensable. So we choose a hydraulic ram pump from Meribah which work only with water power and gravity. This device is able to pump water very high and over long distances without any power sources. And Meribah is the only manufacturer which guarantees a pump operation even with insufficient water supply for a common ram pump.

Step one we did a site survey to get all the required parameters for the installation. After that we calculate and bought all the necessary equipment for the project. We build a dam to collect as much water as we could get from the water source.

The next step we build the collection tank and connect it with 4 inch PVC pipes with the dam. We measured out the optimum place for the pump and build the basement for the ram pump. Until the concrete dried we start to prepare the pipes.

Now it was time to install the pump and the steel pipes and fix them with pipe clips and concrete. Meanwhile the delivery water pipes could be mounted. The high difference to the school was about 80 meters and the length about 250 meters. For this case the first 20% of the delivery pipe should be made out of steel pipes. After that PVC is sufficient enough. But we have to fix them also with clips and concrete.

At that we opened the dam and fill up the collection tank for the first time. In normal operation of a ram pump doesn't stop and runs 24 hours the whole year. Because of the low amount of the water source we have to add an overflow pipe to the collection tank to provide the Meribah automatic starter device. The pump will stop when the collection tank is empty and normally somebody has to restart the ram pump manually. But the Meribah automatic starter, feed by the overflow pipe, will do this work.

Finally we connect the last PVC pipe up to the school and check what we get out a day. So we have now about 2000 liters a day this makes 25 liter for each child and this with just a drop of water for the pump operation.

At least we teach some of the villagers how to take care for the pump and the pipes to guarantee a long lasting water supply. Ideally this ram pump is nearly maintenance free so the lessons are limited to keep the dam and tanks clean and check the pipes from time to time for leakages. So our project successful and the school have water now.

We did three follow up checks to see if everything working properly and the people understand.



Site survey in Poblaki



Taking materials to the pump site



Building the dam



Building the collection tank



Installing the delivery pipes



Mounting the pump



Checking the proper operation of pump and automatic starter device



Measuring the delivery flow rate