

ANATOMY OF A DRILLED WATER WELL



Water Engineers for the Americas (WEFTA) has teamed with the Bolivian NGO 'Suma Jayma' for over 12 years. We are very proud of this close collaboration which has resulted in more than 1,500 Aymaran families now having access to safe and reliable drinking water.



2904 Rodeo Park Drive East, #100
Santa Fe, New Mexico 87505
505-473-9211

info@wefta.net

part 1

The first part of a drilled water well project begins with the contribution of the community, which includes digging two pits for the preparation of drilling mud. All families participate with the excavation of the pits, including women and elderly.

Sometimes during the excavation of the 1 meter deep drilling mud pits, groundwater can be encountered, passing through the sand and loose gravel. Significant amounts of bentonite may be consumed to seal the drilling mud pits to initially hold water.









part 2

The second part of the process is the preparation of the drilling mud, which is essential to a successful water well drilling operation.

The work is carried out by technicians of WEFTA's Bolivian water-works partner, Suma Jayma, including Jaime, Jorge, and Braulio, who are assisted by the residents of the community.

Community members are surprised by the drilling mud, as they often have doubts that pits dug in sand and loose gravel could hold water. The bentonite slurry and its ability to form an impermeable layer impresses the community.









part 3

As is typical with each of our projects, meetings are held with the families of the community and the local authorities to explain the well drilling process and the responsibilities of each party involved. Suma Jayma first meets with the local community leaders and authorities, and subsequently with the families.

Prior to drilling the water well, the authorities of the community may perform an Aymaran ritual, typical of Andean cultures, making an offering to mother earth (challar la pachamama) in the hopes that there will be abundant water. These rituals often include challa with alcohol, coca leaves and beer.











part 4

At the onset of the water well drilling, the Suma Jayma team explains to the community members the manners in which they can support the effort and during what stages of the drilling operations. The families assist with various works, such as changing of drilling pipe and other tasks.









part 5

Jorge, member of the Suma Jayma team, makes the filter screens for this well, by slotting the 6" PVC casing with openings of 1.5 mm +/- thickness.









part 6

The Suma Jayma team observes and logs the drilling cuttings that come up out of the well being drilled, which vary as different geologic substrata are drilled through. For this community's water well, the drilling reached a depth of 70 meters.







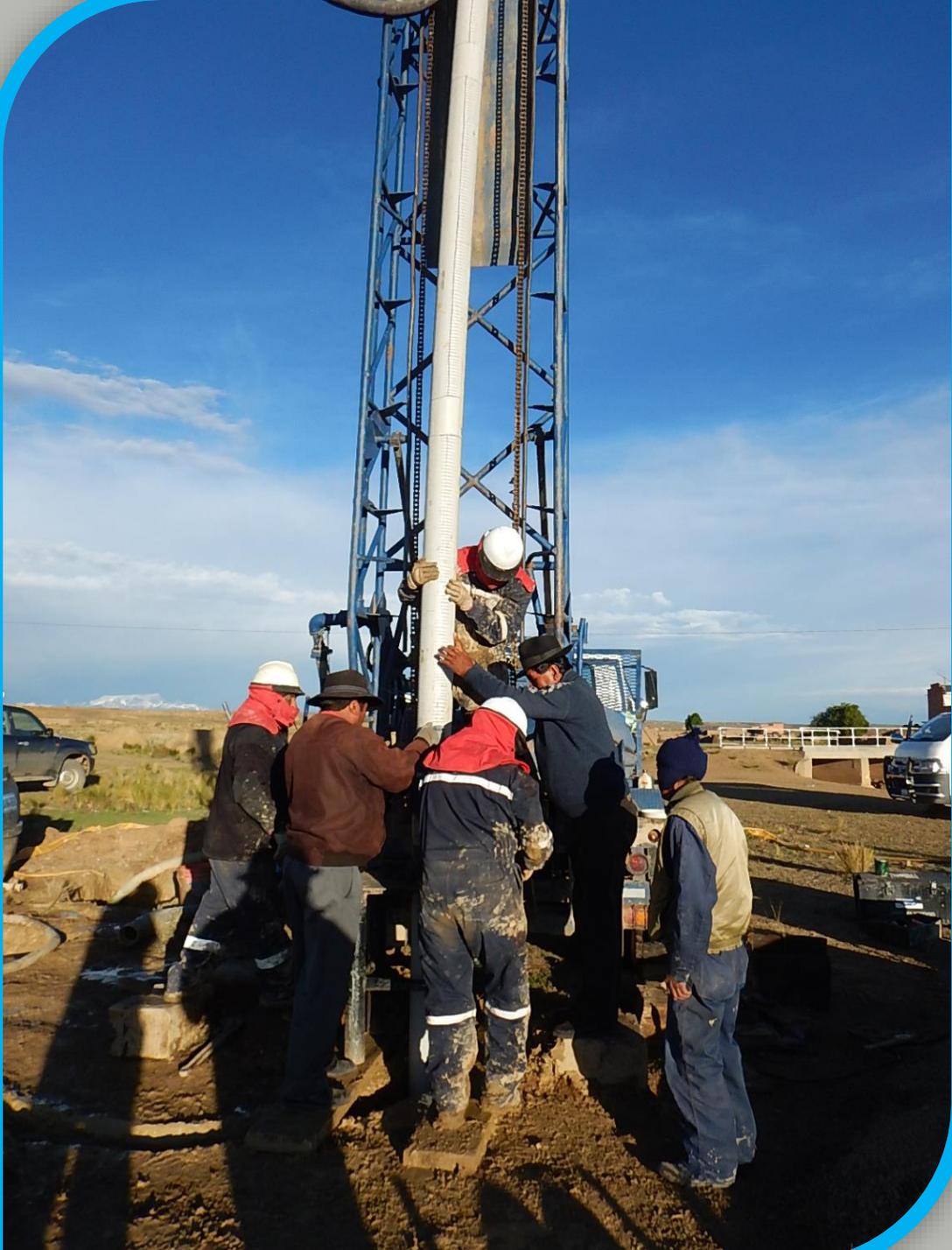


part 7

The water well is encased with 6" PVC casing, and filters placed corresponding with the water bearing strata. A submersible pump with electric motor is later installed.

From start to finish, members of the benefiting families participate in the project.

Mount Illimani stands majestically with a blanket of snow in the background of this project.

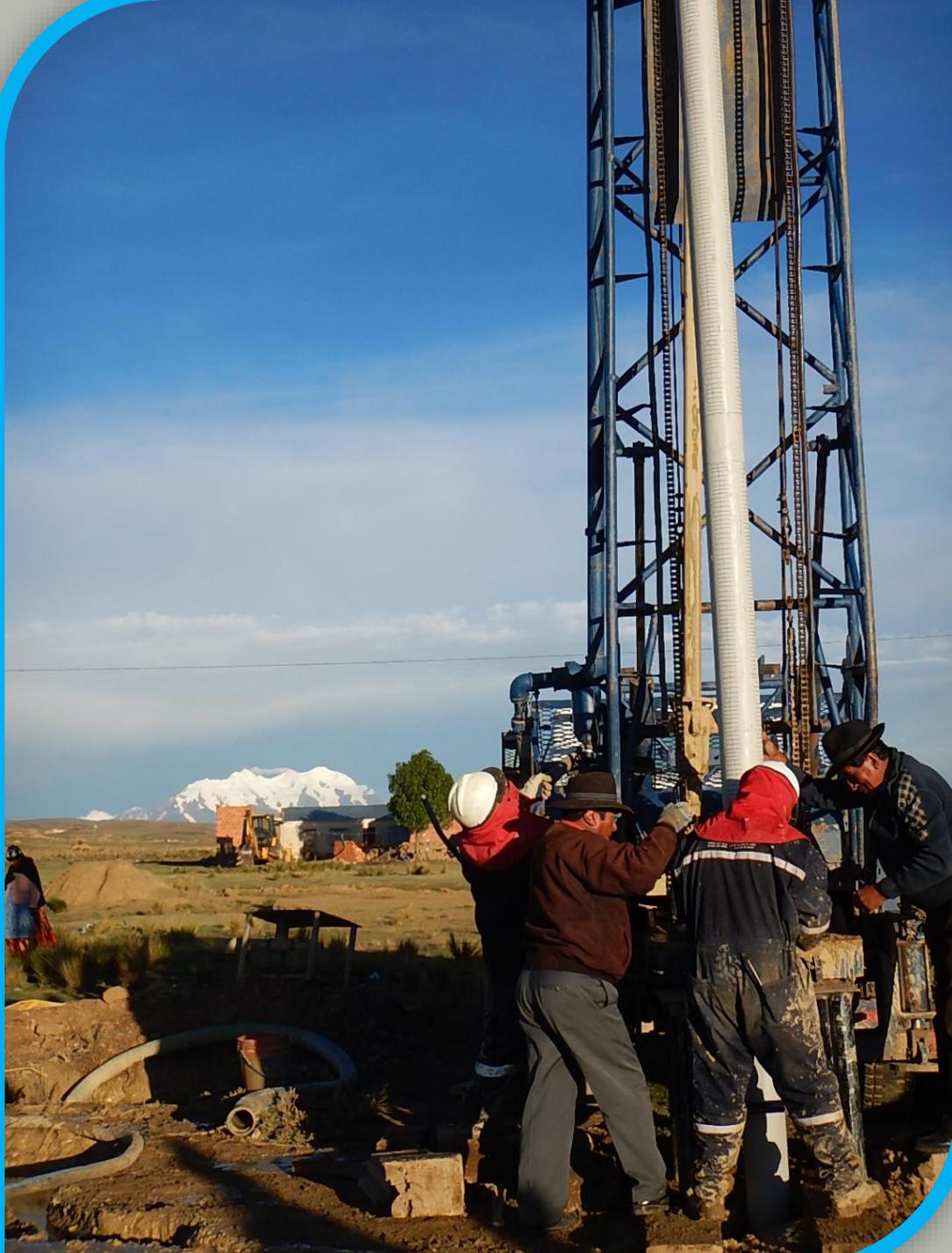














part 8

The last part of a drilled water well project includes a celebration of the conclusion of the water well drilling work, with the authorities in the community.

Lunch may be shared. Referred to in Aymara as the aftapi, which means a shared meal among all, this project concluded with Andean traditional foods, including potatoes, chuño and kati.

In this community, the drinking water committee was comprised of the spouses of the village leaders, who were generous in sharing their food and refreshments.









Sharing our expertise so that communities in Latin America have clean water and sanitation.



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