



Opening a door to dignity in South Nuevo León, México

An Engineers Without Borders Johnson Space Center Chapter Project

www.ewb-jsc.org

The door to Aguilar and other communities in South Nuevo Leon separates the 'Wall Street of Latin America' from a region where residents still drink contaminated surface water and cook with indoor campfires. In contrast with the wealth of industrial Nuevo León in the north, the southern part of the state remains rural and poor. Only a few hours from Monterrey, the villages of the South suffer from public health challenges that can be addressed by Engineers without Borders- Johnson Space Center Chapter appropriate technology projects.



Project Goals:

Water System

- Rainwater catchment systems will provide a reliable source of water
- Water purification systems will provide clean water for families

Energy

- Solar lighting and energy systems will provide cheaper and more reliable energy
- Cooking stoves will reduce gas emissions inside the kitchens.

Micro-Enterprise

Partnerships with Technology Schools will provide possible solutions to micro-enterprises through local foods grown in the area.

Needs in South Nuevo León State, Mexico

The villages of Aguilar, Jesus María, and El Milagro in the semi-arid region of the South are at the mercy of extreme dry weather conditions. The sources of drinking water are small water catchment reservoirs, which are replenished only during the rainy season (July-August). The villages in the mountains have mud brick homes illuminated only by the stars, and residents drink bacterially contaminated surface water from streams even if it means walking 8Km to get it. Recreational activities for many children include going to the forest in search of wood for indoor cooking, and it usually takes one day of their weekend.

In addition to the problem in the villages of the semi-arid region, the rainy season produces run-off water contaminated with anything on its path, including animal feces, trash, and other waste. This water is collected in man-made ponds, which is used for human consumption, domestic labor, and livestock. As a result of unsanitary conditions, gastrointestinal diseases are common.

The cycle of water shortage, agricultural stagnation, and the diasporas of young and adults, produce a bogus economy and a self-sustained village ran by the ones left to struggle with the local burdens: the women, the children and the elderly.

The EWB-JSC Response

Members of the EWB-JSC chapter traveled to the South of Nuevo Leon in March of 2007 to identify these villages and do a pre-assessment of the public health needs. Later in November, the team traveled to Puerta de Aguilar to do an assessment of the village in cooperation with faculty and students from the Institute of Technology of Linares. The team conducted water quality testing, geographical surveying, and community and health surveys. Water samples revealed considerable amounts of harmful bacteria and pathogens. Geographical surveying revealed a non-feasible source of underground water due to high salinity in the region.

During a community meeting between village leaders and EWB-JSC members, a water committee was formed to manage the way future water projects will be executed and operated. Working relations were established between villagers, and educational presentations were made to village leaders and local children. EWB-JSC plans to execute similar responses to address the health public needs within the rest of the communities.

Opening the Door to Aguilar, walking the path to dignity for other communities

A full-implementation trip is scheduled for early May of 2008 to install a water purification system developed by EWB-JSC using low cost, readily available materials. The BYOW system will utilize an electrical powered water pump to address the needs of the people of Aguilar. EWB-JSC is actively planning to return to implement modifications to the existent water filtration system in the rest of the communities according to their specific needs. EWB-JSC is planning to address other public health challenges and will seek ways to improve the local economies through small micro-enterprise projects. Partnership will continue with local Rotary Clubs, IT-Linares, and the government of Nuevo Leon. EWB-JSC projects are funded by grants and donations. We need your help to open the door to clean and safe water and start a walk to a dignified life for the residents of Aguilar and other communities in the South of Nuevo Leon.

How you can make a difference:

Send a check or money order to EWB-USA and write "EWB-JSC Donation" in the memo of your check (all donations are tax deductible).

Send your donation to :

Engineers Without Borders – USA
1881 Lefthand Circle, Suite A-1
Longmont, CO 80501

Or go to our website at www.ewb-usa.org and click on the "donate" link, and select the South Houston JSC Chapter.

Contact Dorothy Ruiz druiz@ewb-jsc.org or Tien Nguyen tien.q.nguyen@nasa.gov