In developing countries of the world the lack of access to clean water is an ongoing crisis. Many organizations are at work to mitigate the crisis with rain water collection systems, water purification systems, and the installation of water supply wells. In the early summer of 2013, Troy Meinen joined a team on a trip organized by Living Water International to the Nueva Concepcion State in Guatemala to drill and install a drinking water well and to teach general hygiene basics in a small village.

This presentation will include an overview of the general physiography and geology of the Pacific coastal region of Guatemala where the project was completed. This region consists of very rich soil derived from Quaternary volcaniclastic sands and gravels, pumaceous ash, and lahar deposited across the coastal plain by volcanic eruptions and numerous area rivers. Much of the area is developed as fruit or sugar cane plantations and these serve as the major employers for the region. Sustainable and right-sized drilling techniques utilized by Living Water International in this region, water-well construction techniques, and pump installation will be discussed.

In this region of Guatemala, the drilling equipment includes a small, trailer-mounted, wet-rotary rig capable of drilling to a depth of more than 300 feet. PVC-cased wells are generally drilled to
depths of 100 to 300 feet to provide clean water to replace the 10 to 15 foot deep hand dug wells that are commonly constructed in the area, which are susceptible to contamination.

The final portion of the presentation will review the format and style of hygiene lessons which were offered. The lessons provide information that allowed community leaders and families better understand the ways that numerous common waterborne diseases spread in the area. The goal of this presentation is to provide a glimpse into one organization’s processes for addressing the critical water issues present in our world today. We encourage HGS members to utilize their professional expertise and time to make a difference in improving people’s health.

Biographical Sketch

**TROY W. MEINEN** is a Texas Professional Geoscientist and Senior Project Manager with the ERM Group, Inc. in Houston. Over his 16-year career, he has worked on a wide variety of industrial facilities and upstream oil and gas projects addressing contaminated groundwater, soil, and sediment issues.

Mr. Meinen currently manages the investigation and remediation of upstream oil and gas sites and assists with due diligence for large acreage position transactions for major oil and gas clients. This includes the assessment of water use and protection, property transaction support, environmental impact assessment, environmental permitting and management, and stakeholder concerns.

Over the past 10 years, Mr. Meinen has participated in four trips to Guatemala organized by Living Water International to install drinking-water wells and to teach better hygiene techniques.