Silali Active-Source Experiment

The Silali active-source seismic experiment was carried out just north of Lake Baringo in the East African Rift, Kenya between November 2012 and February 2013. PI’s include Dr. Aaron Velasco, Dr. Steve Harder and Galen Kaip (all with the University of Texas at El Paso - UTEP) and Dr. Antony Wamalwa (Geothermal Development Company). Galen Kaip and Dr. Antony Wamalwa oversaw the field activities.

Kenya is a developing country that imports most of their electricity from surrounding countries. Geothermal Development Company (GDC) is a Kenyan government company that is exploiting geothermal energy in an effort to produce their own electricity and not depend on neighboring countries. The goal of this experiment was to use seismic data to locate magma chambers in the area. This data combined with other geological and geophysical data in the area will be used aid in locating geothermal boreholes.

The experiment was carried out in two deployments. The first deployment was an EW seismic line across Paka crater. Roughly 800 instruments were deployed along the line at 50 meter station spacing. The seismic sources were eight shot holes drilled approximately 30 meters deep, filled with approximately 250 Kilograms of explosives spread across the line.

The second deployment was NNE/SSW line across Paka and Silali Craters. Roughly 600 instruments were deployed along the line at 90 meter station spacing. There are large gaps in the North part of the line where stations were not deployed for safety reasons (tribal unrest). The seismic sources were eight shot holes drilled approximately 30 meters deep, filled with approximately 250 Kilograms of explosives spread across the line.