

TOP: Team members from UNM and NM Tech examine a well that is part of the Jemez hydrothermal system; STEMAP participants take water samples from hot springs in the Jemez. BOTTOM: The MT system deployed north of Truth or Consequences; Dr. Shari Kelley (Bureau of Geology) smiles during her field presentation



## ENERGIZE NEW MEXICO GEOTHERMAL ENERGY

YEAR 3 ANNUAL REPORT: RESEARCH



New Mexico is a geologically-active state, and is ranked 6th in the nation for geothermal energy potential. While some surface evidence exists for large geothermal systems, such as hot springs, more detailed information lies below the ground. In order to determine the viability and longevity of these systems, *Energize New Mexico* includes a Geothermal Energy component. The team addresses the potential of these systems to create sustainable energy and the economic implications of such systems.

After undergoing intensive training in Year 2, the geothermal team deployed the Zonge Magnetotelluric (MT) system in Year 3 over

the Socorro Magma Body and in areas near Truth or Consequences. The MT system helps the team detect possible geothermal structures underground and allows for temperature estimation. After detecting a low-resistivity anomaly in the rock above the Socorro Magma Body, the team determined that geothermal resources have good potential for direct use of heat such as greenhouses, spas, and direct heating of buildings, but the resources are not likely to be at a temperature high enough to sustain electrical power in New Mexico's current economy.

Real-time monitoring of selected systems in the field is currently underway and the team is expanding, allowing for new modeling and mapping of these systems. The MT equipment is expanding its use to image deep brackish and saline water resources, and the team is the first to deploy a CO<sub>2</sub> flux monitor to measure and evaluate changes in CO<sub>2</sub> release from underground along the Rio Grande Rift.