USGS
science for a changing world

Surface Geophysical Science

Geophysical data generated to address local issues are integrated and analyzed with data from other disciplines to address broader regional and national scale issues. Below are examples of site specific geophysical applications that generate data that both characterize local conditions and also contribute to efforts to understand larger scale science issues or research questions.

Leakage Potential Along Irrigation Canals

Groundwater/Surface-Water Interaction along Rivers and Streams

Freshwater/Saline-Water Transition Zone Delineation

Hydrostratigraphic Characterization

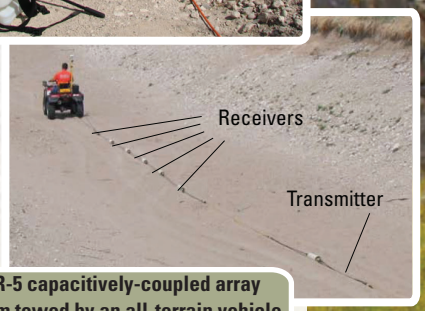
Hydrogeologic Framework Development for Groundwater Models

Groundwater Susceptibility to Contamination

Near-Surface Fracture and Void Detection GPR (Ground-Penetrating Radar)

Geologic Characterization, Strata Thickness and Top of Bedrock

Direct-current Resistivity survey



OhmMapper TR-5 capacitively-coupled array resistivity system towed by an all-terrain vehicle

Assembling geophysical equipment for magnetometer survey

MISSION: To provide reliable, impartial, timely information that is needed to understand the Nation's water resources.

The Water Resources Discipline actively promotes the use of this information by decision makers to

- Minimize the loss of life and property as a result of water-related natural hazards, such as floods, droughts, and land movement
- Effectively manage groundwater and surface-water resources for domestic, agriculture, commercial, industrial, recreational, and ecological uses
- Protect and enhance water resources for human health, aquatic health, and environmental quality
- Contribute to wise physical and economic development of the Nation's resources for the benefit of present and future generations

Frequency-Domain Electromagnetic survey using the GEM-2

Collecting time-domain electromagnetic sounding data using the TerraTEM

Magnetic Resonance Sounding survey

The U.S. Geological Survey (USGS) Texas Water Science Center works in cooperation with approximately 100 municipalities, river authorities, groundwater districts, and State and Federal agencies in Texas to provide reliable, impartial scientific information to resource managers, planners, and other customers. This information is gathered by the USGS Texas Water Science Center to minimize the loss of life and property from natural disasters, to contribute to the conservation and sound economic and physical development of the Nation's natural resources, and to enhance the quality of life by monitoring water, biological, energy, and mineral resources.

If you have any questions or concerns with which we can assist you, contact us or visit our Web site at http://tx.usgs.gov or the national Web site at http://www.usgs.gov. We look forward to serving you in the near future.

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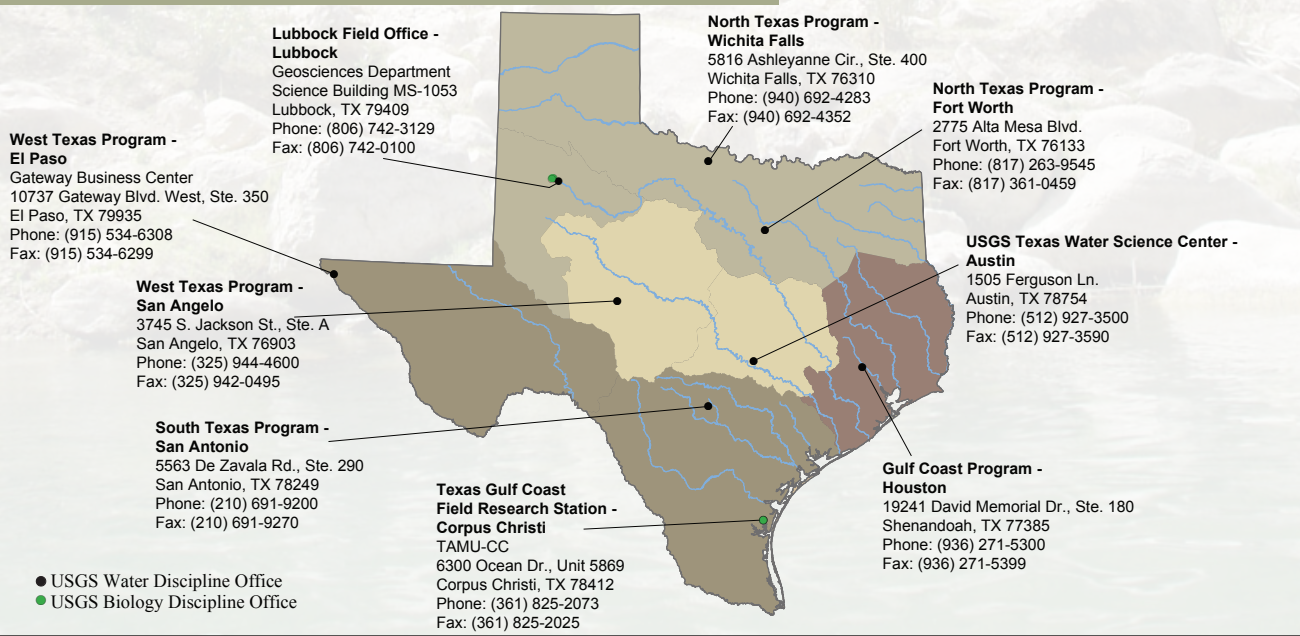
Texas Water Science Center Locations