WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002AR11B

Title: Chemical Variation of Water From The Alluvial Aquifer

Project Type: Research

Focus Categories: Hydrogeochemistry, Water Quality

Keywords: Variation of ground water chemistry, mixing of ground waters, geochemical evolution of ground water

Start Date: 03/01/2002

End Date: 02/28/2003

Federal Funds: $14,071

Non-Federal Matching Funds: $28,142

Congressional District: Third

Principal Investigator:
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Abstract

Concentrations as low as 70 mg/L of chloride in irrigation water can negatively impact crop production. There are a number of the alluvial aquifer wells with these concentrations scattered throughout eastern Arkansas where irrigation with ground water is common. In addition to chloride, other parameters (e.g., sodium, bicarbonate [alkalinity], sulfate and zinc) that effect soil quality and crop production also vary in concentration. The goal of this project is to provide data that will be useful in determining whether mixing of saline water (from depth or from clay-silt lenses) or geochemical evolution of water is responsible for the variation in alluvial aquifer. The objective is to determine the chemical variation of ground water from the alluvial aquifer in both shallow (about 30 feet deep) and deep wells (about 90 feet deep) on local aerial basis where well separation for the shallow wells is 1000 feet or less and is 2500 feet or less for deep wells. Variation due to collection, analytical and water table level will be determined in order that true aerial variation may be determined.