



Conducting a regional groundwater study in Missouri.

## PROJECT PROFILE WATER MANAGEMENT

**CLIENT**  
Missouri American Water

## SOURCE OF SUPPLY INVESTIGATION IN A CONTAMINATED AQUIFER

Joplin, MO

### SITUATION:

The primary water source for Southwestern Missouri is the Ozark Aquifer, which is separated from the overlying Springfield Plateau Aquifer by a low permeability confining layer. In many areas, the Springfield Plateau Aquifer is contaminated with solvents and heavy metals from abandoned mines. All the public water supply wells located in the region are drilled into the deep Ozark Aquifer. In response to increased demand for water, suppliers have drilled additional wells. This has led to significant drawdown and threats of contamination from recharge induced from the Springfield Plateau Aquifer.

### SOLUTION:

Layne conducted a regional groundwater study to investigate the ability of the Ozark Aquifer to sustain long-term population growth in the Joplin area, and evaluate the potential for water-quality risks in the Ozark Aquifer due to contamination of the overlying Springfield Plateau Aquifer. We performed a comprehensive investigation that:

- + Characterized growth in demand and estimated future water use from the Ozark Aquifer
- + Described local and regional effects of groundwater withdrawals in the area
- + Evaluated the risk of contamination from the upper aquifer
- + Evaluated local yield under current and future conditions
- + Systematically evaluated water supply options, including groundwater, surface water, and springs

### SERVICES EMPLOYED:

- + Groundwater Flow Modeling
- + Hydrologic Investigation
- + Integrated Water Supply Planning

