

GWInfo – An Integrated Groundwater Database Entry, Retrieval, and Analysis System

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Biographical Sketches of Authors

Jonathan Foote is a Programmer/Analyst at the Illinois State Water Survey. His education and experience is in engineering and software design. His expertise is with client/server database software development. Mr. Foote has served as project leader on several large information systems projects. He is presently working with the Groundwater section of the Illinois State Water Survey where he has developed and is currently managing various integrated information systems.

Steve Wilson is a groundwater hydrologist in the Groundwater Section and has been at the ISWS since 1983. He has a Masters Degree in Civil Engineering from the University of Illinois. Mr. Wilson has been involved in numerous groundwater assessment projects dealing with both groundwater quantity and quality issues. He is currently involved in the collection of water quality data in the Chicago metro region that is a cooperative effort with the Illinois EPA, Illinois Department of Public Health and the six county health departments in the area. He has spent the last year completing an evaluation of the statewide arsenic occurrence in Illinois groundwater as well as working with other staff to convert the groundwater databases into a new, user-friendly system.

Abstract

The Illinois State Water Survey (ISWS) has implemented an integrated functional information system known as GWInfo. GWInfo has joined several stand-alone systems, resulting in improved data usability and availability. The ISWS maintains groundwater-related databases to provide basic information to the general public and to support applied groundwater research activities. Data include groundwater quality, public/industrial/commercial and private well properties, aquifer test, annual withdrawal, water level, and synoptic measurements. These data, which span more than 100 years, were formerly stored in separate databases, independent of each other. Each functional area had its own system for managing the data and was disconnected from other functional areas within the organization.

GWInfo crosses functional lines by joining stand-alone systems. This is accomplished by using an MSSQL database with a .Net application interface. Centrally located databases dissolve many of the barriers related to disjointed data. The current version of GWInfo allows an ISWS scientist to view, report, download, or chart data for a well or an area, for a variety of data. This powerful application allows users to create datasets in minutes that previously would have taken hours or even days to produce. In addition, because of the system architecture and the addition of spatial location information for all data, these data are being integrated into ArcSDE and ArcIMS so that public information can be shared dynamically over the web and in GIS.