

COMMON FIELD PRACTICES TO ENSURE COMPARABILITY OF GROUND-WATER DATA

R.A. Sheets, U.S. Geological Survey
M.P. Nickolaus, Ground Water Protection Council
W.L. Cunningham*

*U.S. Geological Survey, Office of Ground Water
12201 Sunrise Valley Drive, Mail Stop 411
Reston, VA, 20192-0002

ABSTRACT

The Advisory Committee on Water Information, Subcommittee on Ground Water (ACWI-SOGW) formed in January 2007 to develop a nationwide, long-term ground-water quantity and quality monitoring framework; the subcommittee will provide information necessary for the planning, management, and development of ground-water supplies to meet current and future water needs and ecosystem requirements (<http://acwi.gov/sogw/index.html>). A Field Practices Workgroup consisting of Federal, State, and nongovernmental representatives was formed to develop recommended field procedures for the collection of ground-water-levels and ground-water-quality data.

The workgroup established a recommended framework for field collection of data to ensure that measurements are not only an accurate representation of the water levels and water quality in an aquifer but also are comparable among hydrogeologic terranes and data-collection agencies. This framework includes a minimum set of data elements to ensure that all measurements could be incorporated into a nationwide ambient ground-water monitoring data network.

The workgroup solicited field-practices documents from National, regional, and State data-collection programs. Field practices for ground-water levels include, but are not limited to, periodic, continuous, and real-time water-level monitoring and remote sensing of ground-water levels. Ground-water-quality field practices include a recommended set of practices and data elements that should be contained in any nonregulatory field-sampling protocol or practice. The resulting document consists of recommended measurement frequencies, quality-assurance/quality-control procedures, and methods for data handling and management. The document also includes a section on new technologies—in particular, remotely sensed measurements—and detailed bibliographic references for the measurement of both water levels and water quality.

KEYWORDS

Ground water, field practices, methods, procedures, monitoring, water levels, water quality