WATER-RESOURCES ACTIVITIES

IN ILLINOIS, 1986

Compiled by Mary L. Garrelts

U.S. GEOLOGICAL SURVEY

Open-File Report 87-39

Urbana, Illinois

1987

UNITED STATES DEPARTMENT OF THE INTERIOR

DONALD PAUL HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

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By Mary L. Garrelts

ORIGIN AND MISSION OF THE U.S. GEOLOGICAL SURVEY

The U.S. Geological Survey was established by an act of Congress on March 3, 1879, to provide a permanent Federal agency to conduct the systematic and scientific "classification of the public lands, and examination of the geological structure, mineral resources, and products of national domain." An integral part of that original mission includes publishing and disseminating the earth-science information needed to understand, to plan the use of, and to manage the Nation's energy, land, mineral, and water resources.

Since 1879, the research and fact-finding role of the U.S. Geological Survey has grown and been modified to meet the changing needs of the Nation it serves. As part of that evolution, the U.S. Geological Survey has become the Federal Government's largest earth-science research agency, the Nation's largest civilian mapmaking agency, the primary source of data on the Nation's surface- and ground-water resources, and the employer of the largest number of professional earth scientists. Today's programs serve a diversity of needs and users. Programs include:

- Conducting detailed assessments of the energy and mineral potential of the Nation's land and offshore areas.
- Investigating and issuing warnings of earthquakes, volcanic eruptions, landslides, and other geologic and hydrologic hazards.
- Conducting research on the geologic structure of the Nation.
- Studying the geologic features, structure, processes, and history of the other planets of our solar system.
- Conducting topographic surveys of the Nation and preparing topographic and thematic maps and related cartographic products.
- Developing and producing digital cartographic data bases and products.
- Collecting data on a routine basis to determine the quantity, quality, and use of surface and ground water.
- Conducting water-resource appraisals in order to describe the consequences of alternative plans for developing land and water resources.
- Conducting research in hydraulics and hydrology, and coordinating all Federal water-data acquisition.

- Using remotely sensed data to develop new cartographic, geologic, and hydrologic research techniques for natural resources planning and management.

- Providing earth-science information through an extensive publications program and a network of public access points.

Along with its continuing commitment to meet the growing and changing earth-science needs of the Nation, the U.S. Geological Survey remains dedicated to its original mission to collect, analyze, interpret, publish, and disseminate information about the natural resources of the Nation--to provide "Earth Science in the public Service."

MISSION AND PROGRAM OF THE WATER RESOURCES DIVISION

The mission of the Water Resources Division is to provide the hydrologic information and understanding needed for the optimum utilization and management of the Nation's water resources for the overall benefit of the people of the United States.

This is accomplished, in large part, through cooperation with other Federal and non-Federal agencies, by:

- Collecting, on a systematic basis, data needed for the continuing determination and evaluation of the quantity, quality, and use of the Nation's water resources.

- Conducting analytical and interpretive water-resource appraisals describing the occurrence, availability, and the physical, chemical, and biological characteristics of surface and ground water.

- Conducting supportive basic and problem-oriented research in hydraulics, hydrology, and related fields of science to improve the scientific basis for investigations and measurement techniques and to understand hydrologic systems sufficiently well to quantitatively predict their response to stress, either natural or manmade.

- Disseminating the water data and the results of these investigations and research through reports, maps, computerized information services, and other forms of public releases.

- Coordinating the activities of Federal agencies in the acquisition of water data for streams, lakes, reservoirs, estuaries, and ground waters.

- Providing scientific and technical assistance in hydrologic fields to other Federal, State, and local agencies, to licensees of the Federal Energy Regulatory Commission, and to international agencies on behalf of the Department of State.

ILLINOIS DISTRICT

Organization

The Illinois District of the U.S. Geological Survey, Water Resources Division, consists of two operating sections, two support units, and three field offices (fig. 1). Personnel are based at the District office and at Field Headquarters in Urbana, Mt. Vernon, and De Kalb. The District operates with guidance from Regional and National offices in Reston, Virginia. Offices for research, training, equipment development, and laboratory services, located throughout the United States, provide technical assistance and advice to the District.

Network-Operations Section

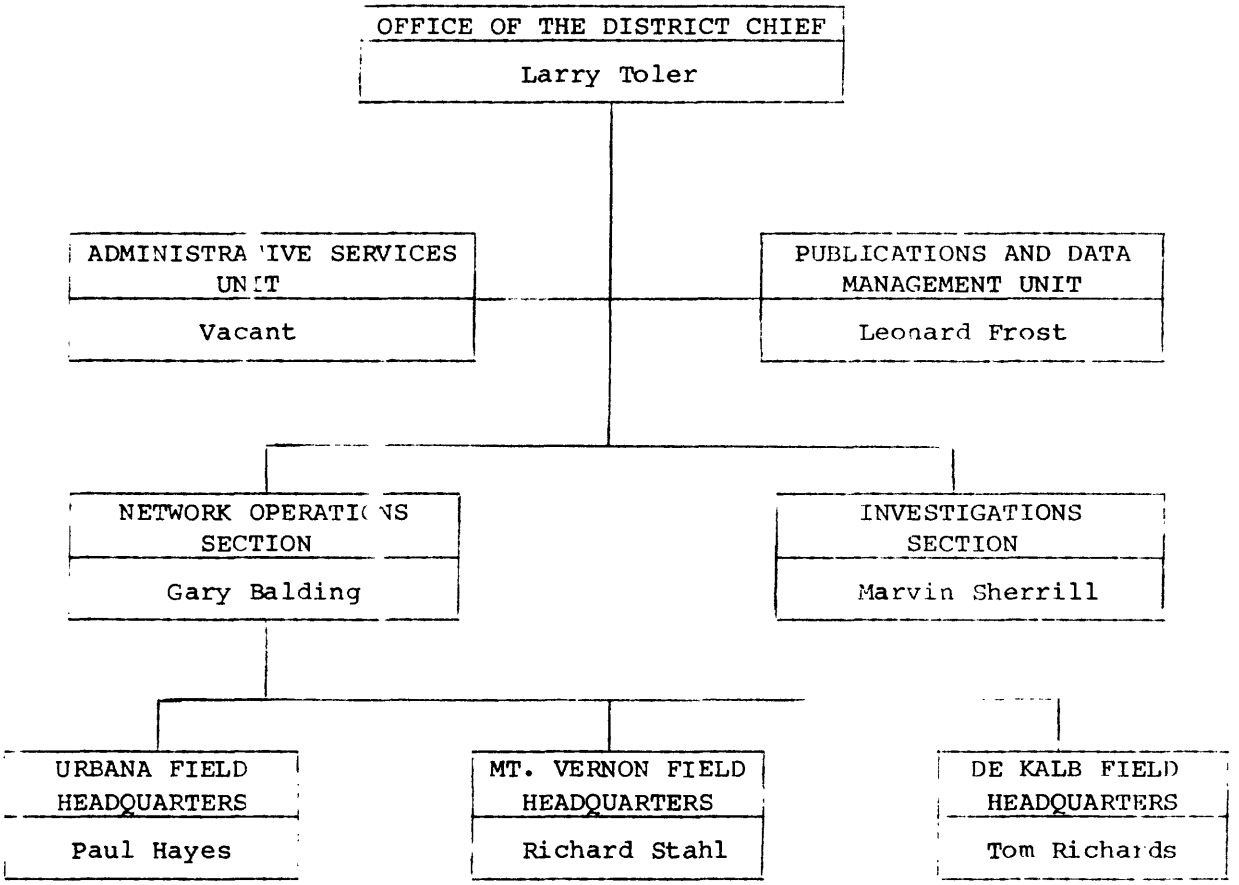
The Network-Operations Section designs and implements a network of stream-gaging, water-quality, sediment, and observation-well sites based on data needs. The Section directs the installation and maintenance of equipment, data collection and analysis, and compilation of records for publication in the annual data report. It maintains the drainage-area map file and all hydrologic-data files. The Section conducts special data-collection efforts as needed or on demand, for example, major floods, low-flow measurements, and indirect measurements, and provides assistance in the collection of water-resources data in support of projects. The Section conducts special projects related to water use and coordinates the water-use program. Field offices are responsible for data collection in their designated areas and report to the Chief, Network Operations Section (fig. 2).

Investigations Section

The Investigations Section conducts multi-discipline hydrologic investigations to determine the quantity and quality of surface and ground water and to define and evaluate the extent and availability of water resources of drainage basins, counties, States, and water-resources regions. The Section conducts special hydrologic and research studies on current water issues such as coal hydrology, radiohydrology, sedimentation and erosion, urban hydrology, water disposal, and river quality. Special investigative techniques for water-resource evaluation include test drilling, packer tests, tracers, surface and borehole geophysics, and ground-water and surface-water modeling of flow and solute movement. Personnel prepare and review reports of investigations for both scientific and lay audiences.

Publications and Data-Management Unit

This support unit provides ADP services; maintains computer manuals and program catalogs, does computer programming, and assists hydrologists in program selection, application, and modification. The Unit assembles reports



District Office	(217) 398-5353	U.S. Geological Survey 102 E. Main Street, 4th Floor Urbana, Illinois 61801
Urbana Field Headquarters	(217) 398-5570	102 E. Main Street, 4th Floor Urbana, Illinois 61801
Mt. Vernon Field Headquarters	(618) 242-4495	Room 231, Federal Building 105 S. Sixth Street Mt. Vernon, Illinois 62864
De Kalb Subdistrict	(815) 753-1162	629 Lincoln Terrace P.O. Box 427 De Kalb, Illinois 60115

Figure 1.--Illinois District organization chart with office addresses.

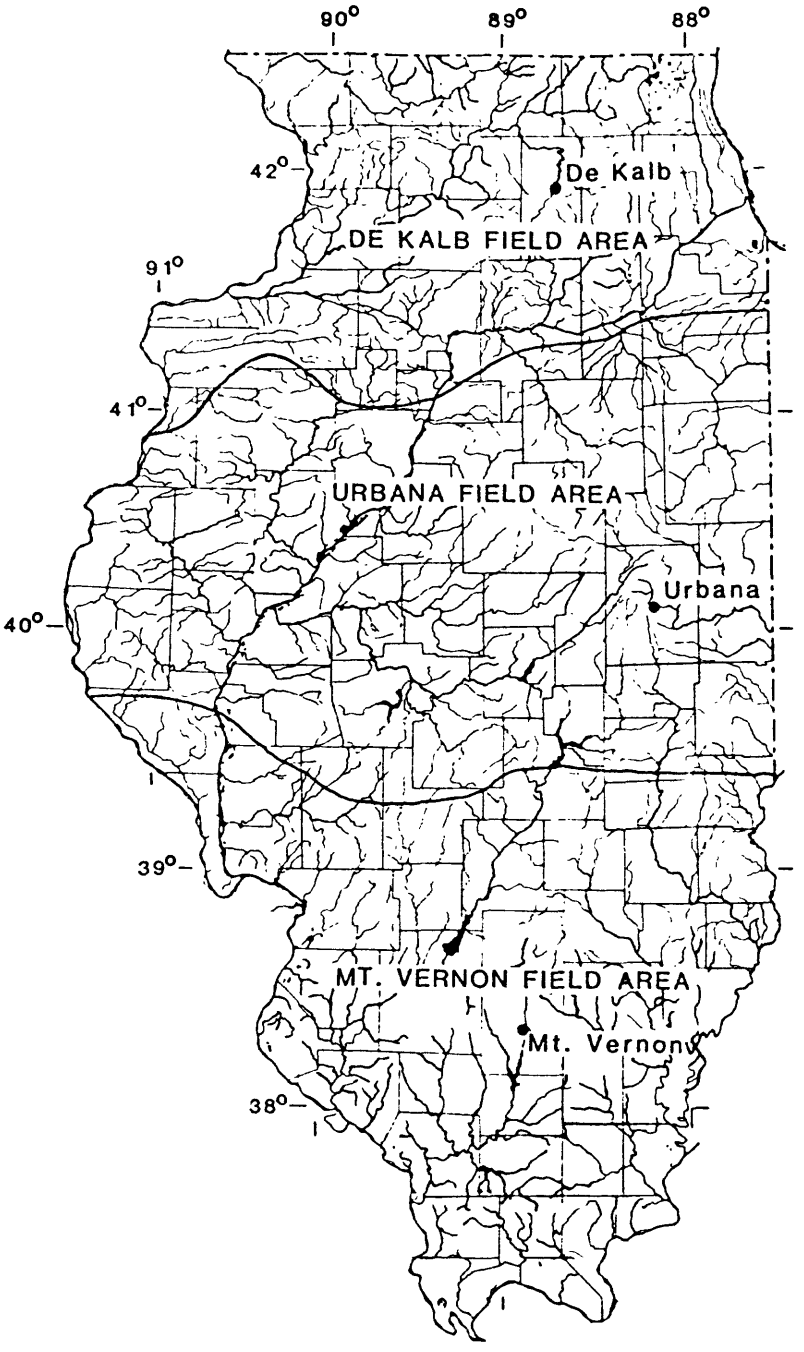


Figure 2.--Suboffice areas of responsibility.

for colleague, Regional, and Divisional review, prepares camera-ready copy for publication, keeps manuscript status records, and prepares printing specifications. The Unit maintains the District's data files and library; maintains District warehouse facilities, including supplies of hand tools and shop equipment; processes vehicle procurement and disposition; and maintains the District controlled-property inventory.

Administrative-Services Unit

The Administrative-Services Unit is responsible for maintenance of and compliance with Federal acquisition regulations, Departmental manuals, and Bureau and Division operating policies. The Unit provides support services in the areas of administrative management, budget formulation and execution, financial planning, accounting, personnel, procurement, space management, and general office procedures.

Budget and Funding Sources

Funds to support the work performed by the Illinois District, Water Resources Division, are derived from three principal sources.

Federal Program

Funds for the Federal Program are appropriated by the Congress, and are specifically identified in the annual Geological Survey budget. These funds are used to support research, data collection, high-priority topical programs including energy-related programs, the coordination of all Federal programs related to collection of water data, and internal support services.

Federal-State Cooperative Program

Federal funds are appropriated by the Congress and used to match those furnished by State and other tax-supported agencies on a 50-50 basis. These funds are used for a variety of hydrologic data-collection activities and water-resources investigations in which the Water Resources Division represents the national responsibilities and the cooperating agencies represent State and local interests. Agencies supporting water-resources activities in Illinois during fiscal year 1986 are listed in table 1.

Table 1.--Agencies supporting water-resources activities during fiscal year 1986

State Agencies

Illinois Department of Transportation
- Division of Water Resources

Illinois Envirionmental Protection Agency
- Division of Water Pollution Control
- Division of Public Water Supplies

Illinois Department of Energy and Natural Resources
- Water Survey Division

Local Agencies

Bloomington and Normal Sanitary District

Forest Preserve District of Cook County

Du Page County Public Works

The Metropolitan Sanitary District of Greater Chicago

City of Springfield

City of Decatur

Federal Agencies

Department of the Army
- Corps of Engineers
  - Rock Island District
  - St. Louis District
  - Louisville District
  - Chicago District

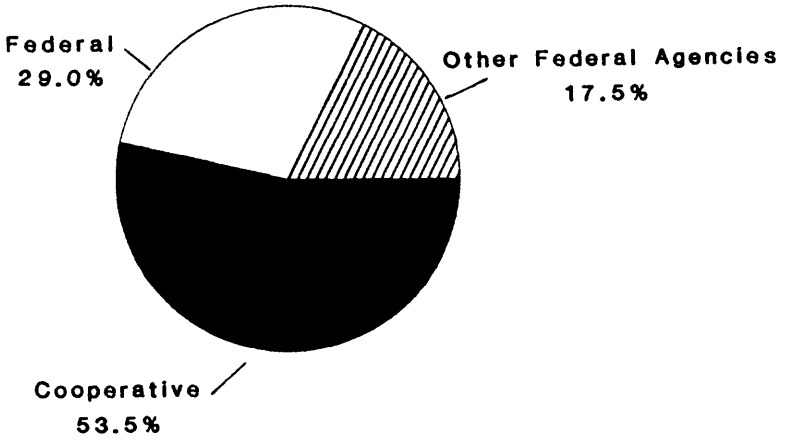
Department of Housing and Urban Development
- Federal Emergency Management Agency

Environmental Protection Agency

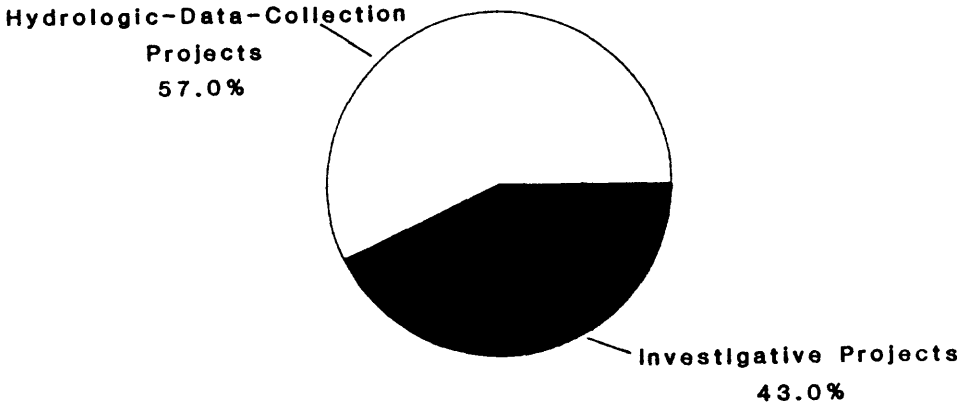
Other Federal Agencies (OFA) Program

In this program, the funds are transferred to the Geological Survey as reimbursement for work performed at the request of another Federal agency.

Funding from all sources in fiscal year 1986 amounted to about $3,000,000 which was distributed as follows:



The diagram below shows the percentage of the activities for fiscal year 1986 in each of the broad categories of hydrologic data collection and water-resource investigations:



The activities are directed toward obtaining the information needed by managers and planners for the solution or alleviation of water problems in Illinois and the Nation.

WATER ISSUES AND CONDITIONS

Illinois generally has adequate supplies of water suitable for most uses. The mean annual precipitation for the 1951-80 period is shown in figure 3. Water is available from several major rivers and lakes within or bordering Illinois and from ground-water sources. In the northern one-third of the State, most municipal water supplies are obtained from ground water, whereas, in the remainder of the State, municipal supplies generally are obtained from surface-water sources. In the southern two-thirds of the State, potable ground water may be obtained locally from alluvium-filled shallow valleys that were eroded into the bedrock by ancestral streams.

The Water Resources Division is the principal Federal agency responsible for providing hydrologic information required for the best utilization and management of the Nation's water resources. The activities of the Illinois District are structured to provide data and information needed to address major water issues. Three major water-resources issues in Illinois have to do with water-availability, water-quality, and hydrologic hazards and land-use issues. These issues are summarized below.

Water-Availability Issues

Ground water is the source for most municipal supplies in the northern part of the State, especially in the Chicago metropolitan area. Water withdrawals in this area have created water-level declines in excess of 850 feet. Most rural supplies throughout the State are obtained from shallow aquifers that are vulnerable to drought and contamination. During drought, some surface-water supplies are inadequate, particularly in the southern two-thirds of Illinois. Withdrawals of water (ground water plus surface water) are shown in figure 4.

Water-Quality Issues

Pollution of streams by hazardous waste from disposal sites and by overflows from combined storm and sanitary sewers is recognized as an important issue. Nonpoint source pollution resulting from runoff from agricultural lands and modification of stream channels is a statewide issue. Statewide, streams and lakes may be affected by sedimentation, turbidity, aquatic weeds, fluctuating water levels, algal blooms, and oxygen depletion.

Programs to identify stream biota and habitats are being conducted by the Illinois Environmental Protection Agency to provide information for discharge permitting and resource management.

Ground-water pollution in Illinois has numerous sources including landfills, feed lots, septic systems, road salts, spills, abandoned wells, leaking underground storage tanks, mine wastes, and saline intrusion. More than 500 potential hazardous-waste sites have been identified in the State. Maximum allowable concentrations of volatile organics, fluoride, and barium in ground water in some areas are exceeded.

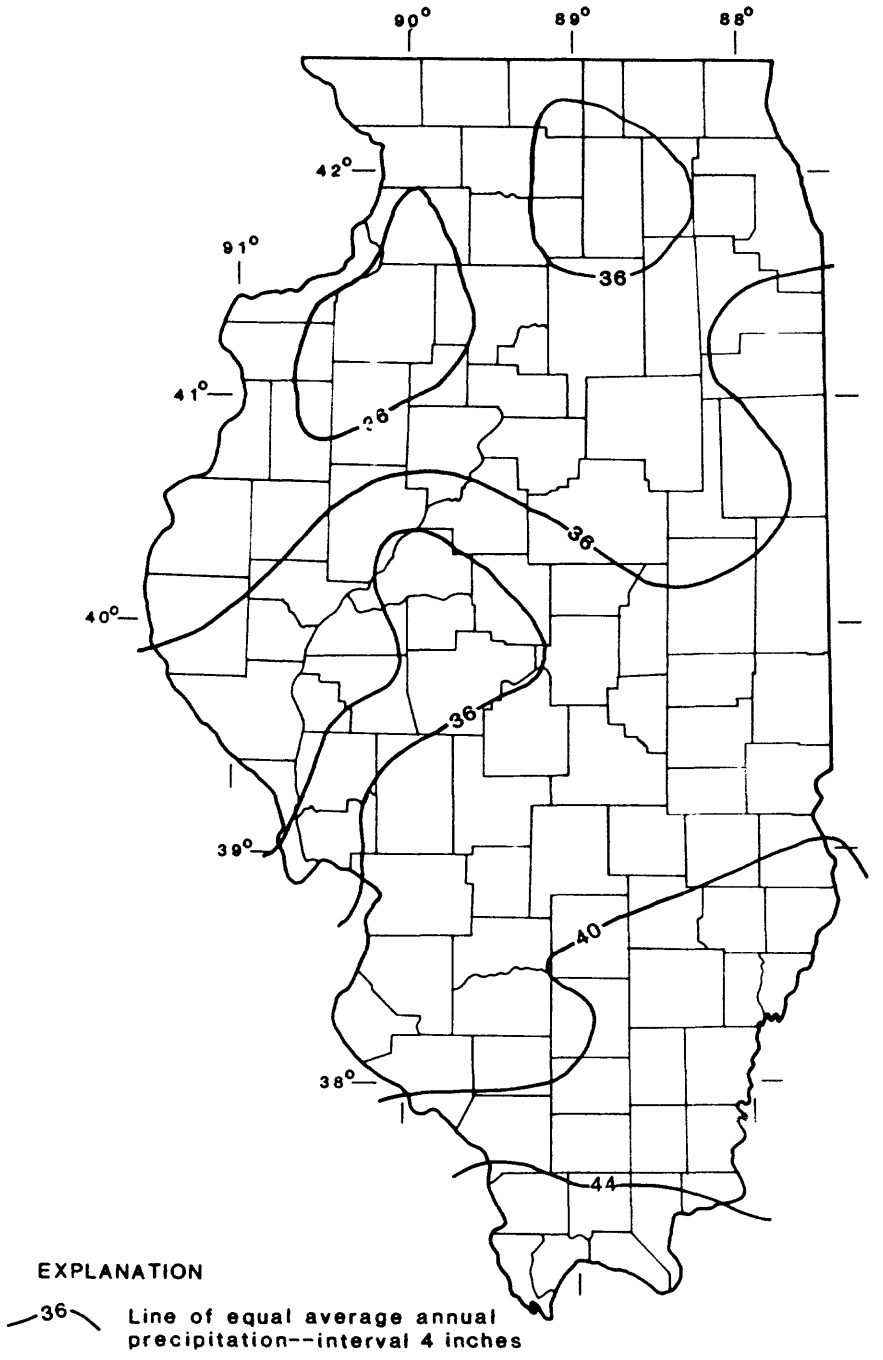


Figure 3.--Average annual precipitation in Illinois, 1951-80 (compiled by D. A. Olson from National Oceanic Atmospheric Administration data).

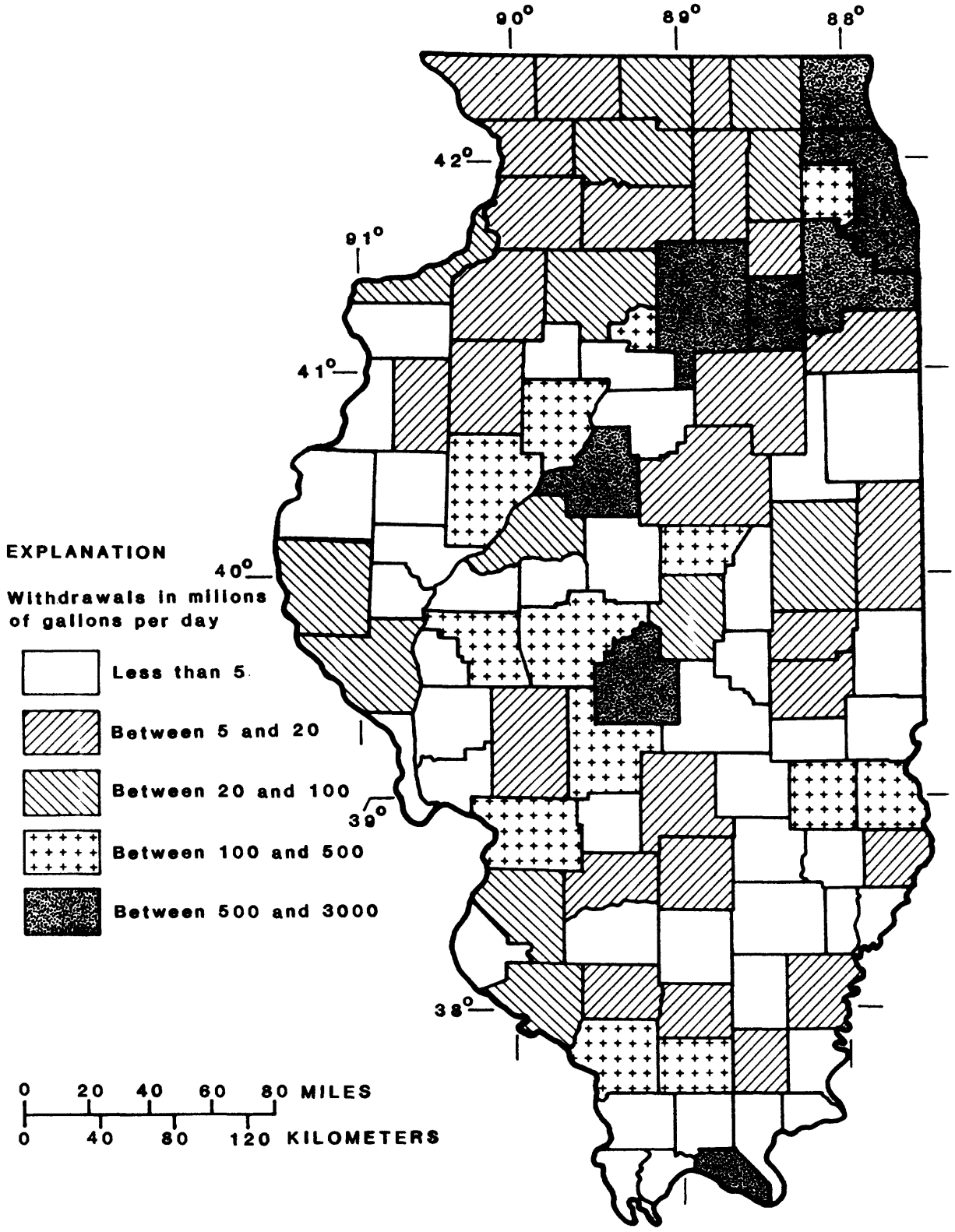


Figure 4.--Water withdrawals in Illinois during 1985.

Standards for seasonal disinfection of wastewater are being considered, partially, in response to concern about halogenation of organics.

Hydrologic Hazards and Land-Use Issues

Flood damages in urban areas have increased more than 900 percent since the mid-1960's. Rising ground-water levels in parts of the East St. Louis area have caused flooded basements and structural damage to buildings. Some degree of erosion occurs statewide, and affects croplands, streams, lakes, and reservoirs. Estimates are that in some areas more than one-third of the original soil has been eroded during the past 100 years. Many wetland areas in the State have been drained to allow for agricultural, urban, and industrial uses during the past 160 years. Of the less than 50,000 acres of wetlands remaining, less than 25 percent are protected by either the State or Federal government.

WATER QUANTITY AND QUALITY

Surface-Water

Quantity

Surface-water discharge (streamflow) and stage (water level) data are collected for general hydrologic purposes such as assessments of water resources, areal analyses, determination of long-term trends, research and special studies, or for management and operational purposes. In Illinois, data on discharge and stage were obtained at the following numbers of stations:

Station classification		Number of stations
Stream stations		173
Continuous record:		
Discharge	144	
Stage only	5	
Partial record:		
Peak (maximum) flow only	24	
Lake and reservoir stations		8
Stage and contents	3	
Stage only	5	
Total		181

The locations of sites where streamflow or stage are collected are shown in figure 5, and the types of data collected are shown in table 2. Average runoff for the 1951-80 period is shown in figure 6.

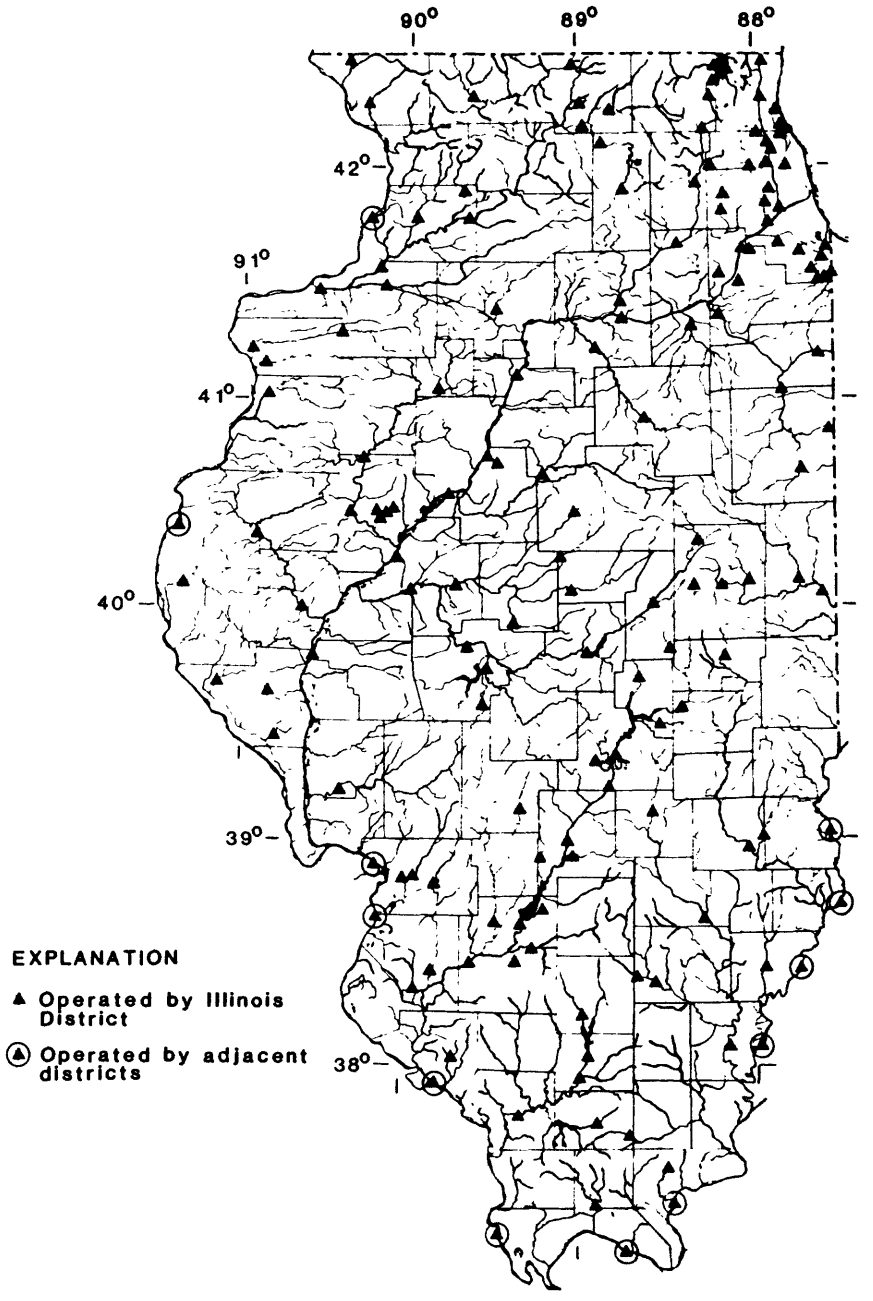


Figure 5.--Surface-water stations.

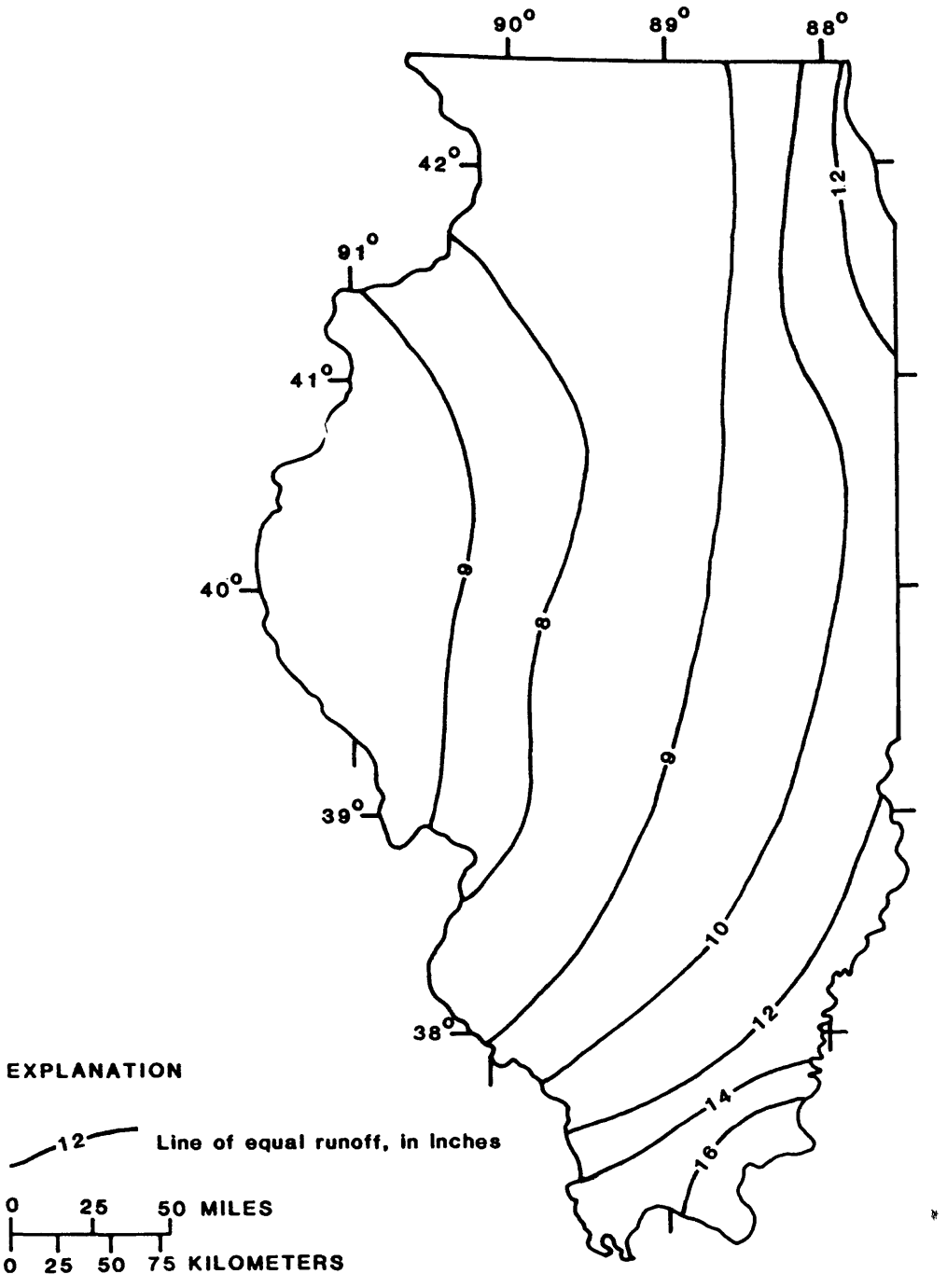


Figure 6.--Average annual runoff, in inches, 1951-80.

Quality

Data collected from 205 water-quality sampling stations, operated jointly by the U.S. Geological Survey and the IEPA (Illinois Environmental Protection Agency) were recently evaluated by the IEPA (1984). The evaluation showed that between 1972 and 1982 major water-quality improvements took place. Fewer river miles of streams were considered seriously degraded in 1982 than in 1972 (fig. 7). Approximately 35 percent of the streams assessed showed improvement, 64 percent were unchanged, and only 1 percent were degraded. Causes of stream-use impairment are shown in figure 8. Water-quality stations operated during fiscal year 1984 are shown in figure 9 and are listed in table 2.

Two parameters of serious concern at the present are dissolved oxygen and ammonia. Despite the recognition of ammonia as a current problem, violations of State standards (Illinois Pollution Control Board, 1984) for both total and un-ionized ammonia have shown downward trends since 1978. Violation rates for iron and fecal coliform bacteria were higher in 1982 and 1983 than they were in the previous 4 years.

Four stations, two of which are included in the cooperative ambient network, are used to monitor the effects of sludge application by the Metropolitan Sanitary District of Greater Chicago at a site near Bryant in Fulton County.

Samples for determining instantaneous sediment concentrations are collected as part of the water-quality samples at 13 NASQAN (National Stream Quality Accounting Network) sites. Six of these stations are operated by States adjacent to Illinois. Daily or near-daily sediment samples are collected and daily sediment records are computed at nine stations. Four of the NASQAN stations are also daily sediment record stations.

General levels of mineralization of surface waters in Illinois are indicated in figure 10. Sulfate concentrations, which reflect areas with surface coal mining, are also shown in figure 10.

Data classification	Number of stations
Physical data:	
Water temperature	207
Specific conductance	207
pH	207
Dissolved oxygen	207
Sediment data	9
Chemical data:	
Inorganic constituents	205
Organic constituents	207
Microbiological data	205

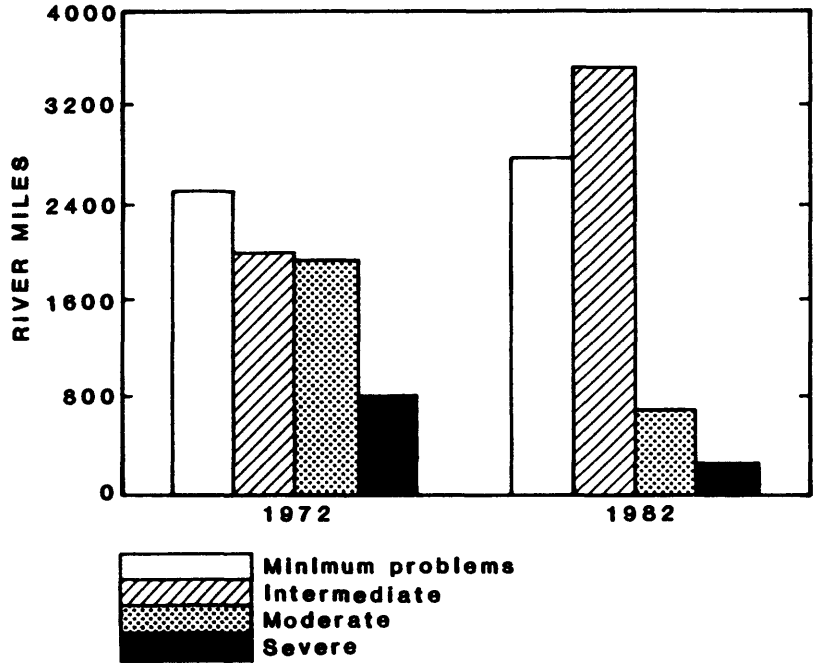


Figure 7.--Changes in stream conditions in Illinois (IEPA, 1984).

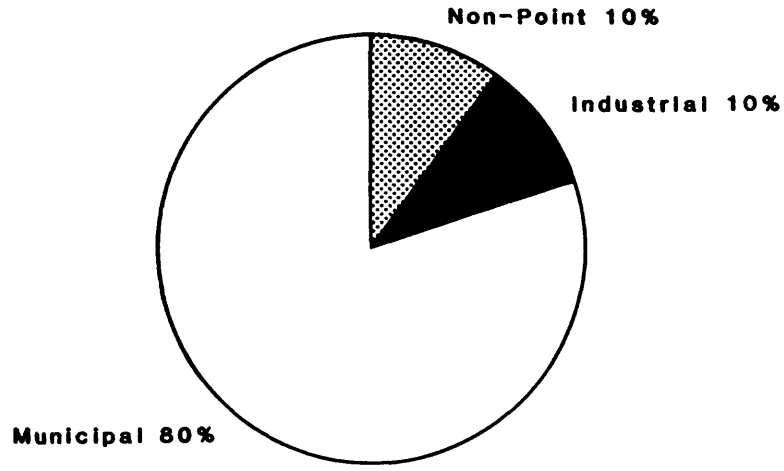


Figure 8.--Causes of use impairment of Illinois streams (IEPA, 1984).

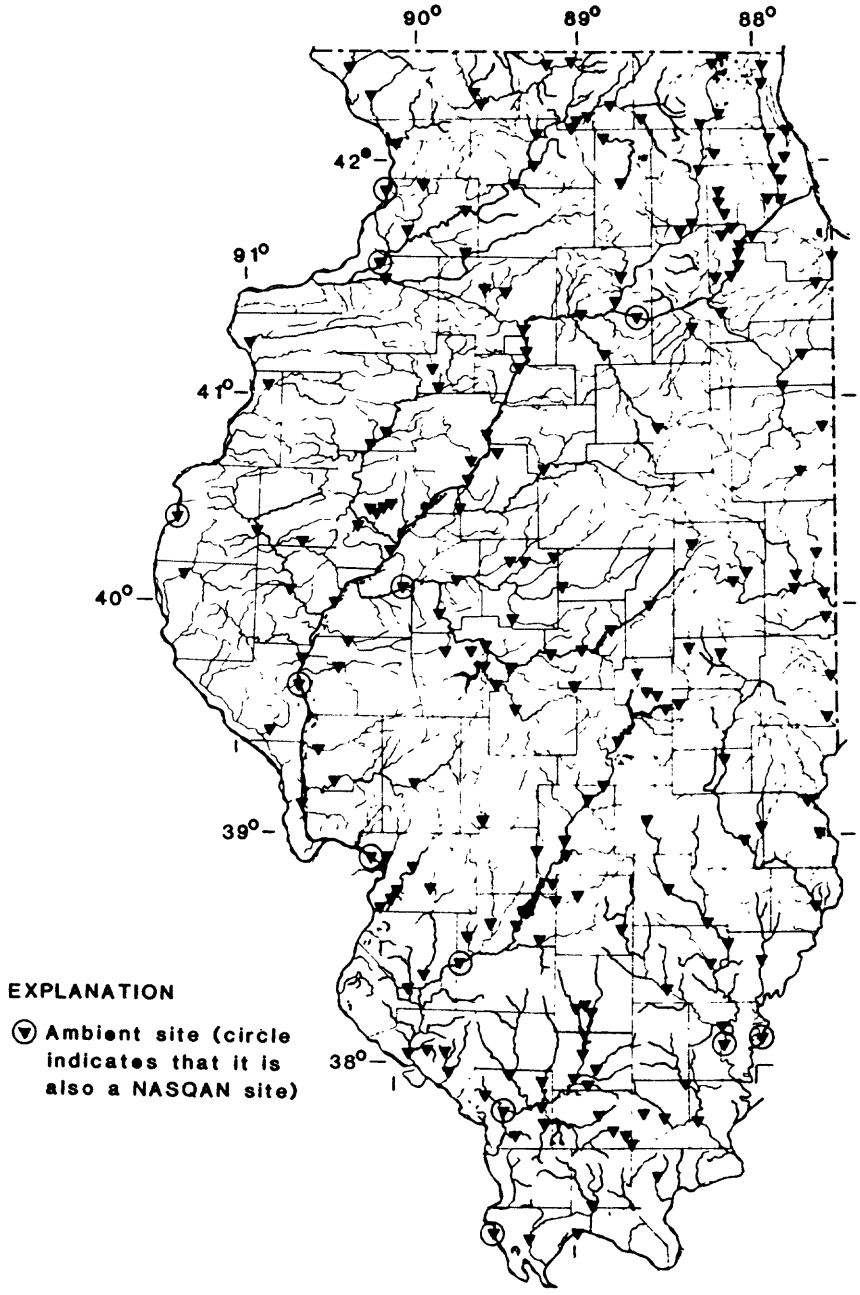


Figure 9.--Water-quality stations.

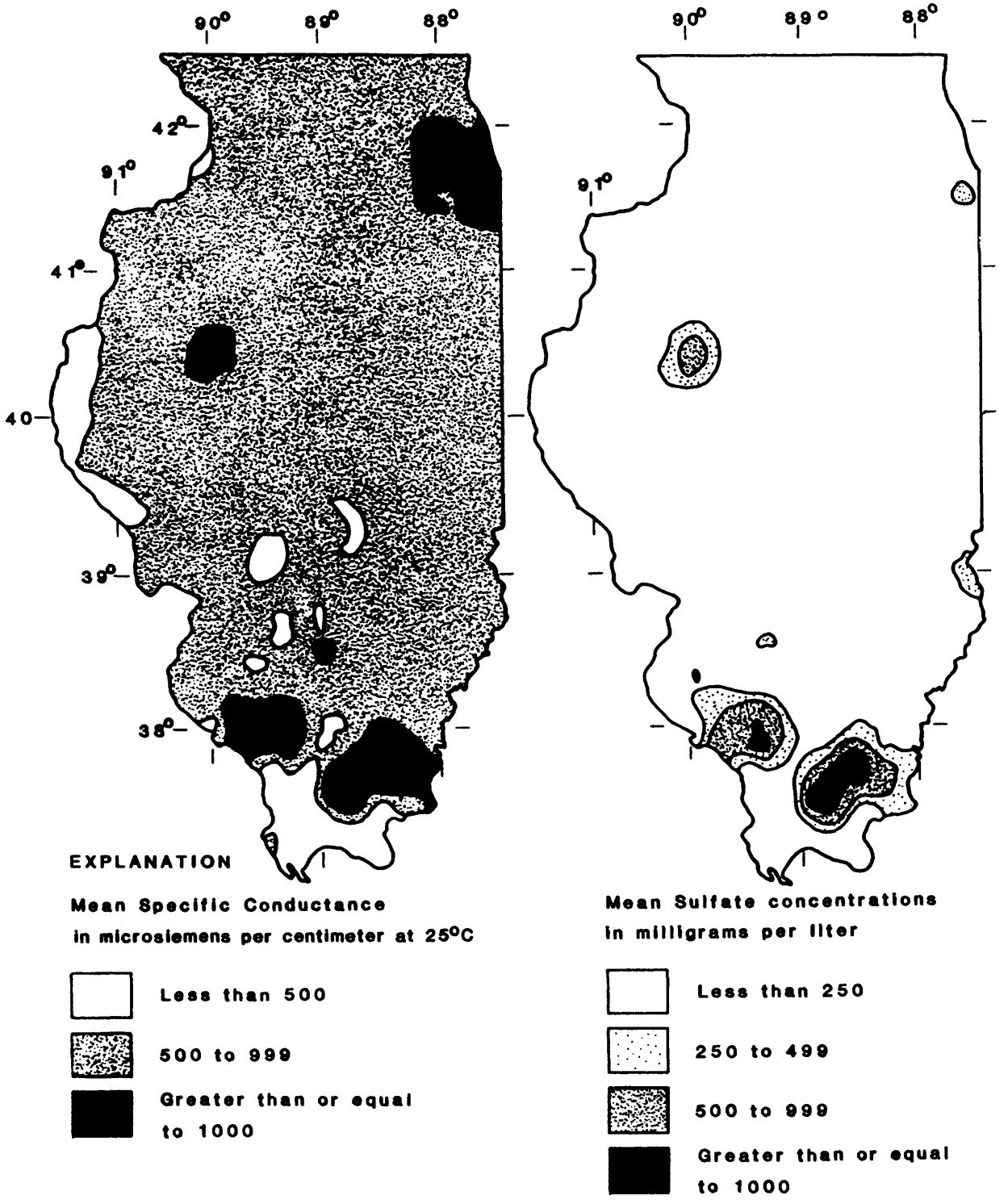


Figure 10.--Mean Specific conductances and mean sulfate concentrations for streams in the Illinois surface-water-quality network.

Ground Water

Water levels in wells, discharges of springs and wells, and water-quality analyses are used in monitoring ground-water trends; however, these hydrologic data must be integrated with other observations and ground-water system studies in order to fully assess these trends. In Illinois, the U.S. Geological Survey regularly measures water levels in three observation wells. Other wells, 977 in number, are known as project wells and are used for specific studies. Among these are 956 public water supply wells which comprise the newly established ground-water-quality observation network.

The types of data collected for observation and project wells are as follows:

Data type	Number of wells
Water levels	264
Physical data:	
Water temperature	717
Specific conductance	676
pH	717
Chemical data:	
Inorganic constituents	956
Organic constituents	635

The ground-water stations and types of data collected are listed in table 3. No water-quality data are collected at the three observation wells. Numbers of wells, by county, in the water-level observation network and the water-quality observation network are shown in figure 11.

DATA MANAGEMENT

The Water Resources Division manages data from its own activities and from the activities of other water oriented agencies.

WATSTORE

The National Water Data Storage and Retrieval System (WATSTORE) of the U.S. Geological Survey provides computerized procedures and techniques for processing water data and provides effective and efficient management of data-releasing activities. It was established in November 1971 to computerize the water-data system of the U.S. Geological Survey and to provide for more effective and efficient management of its data-releasing activities. The system is

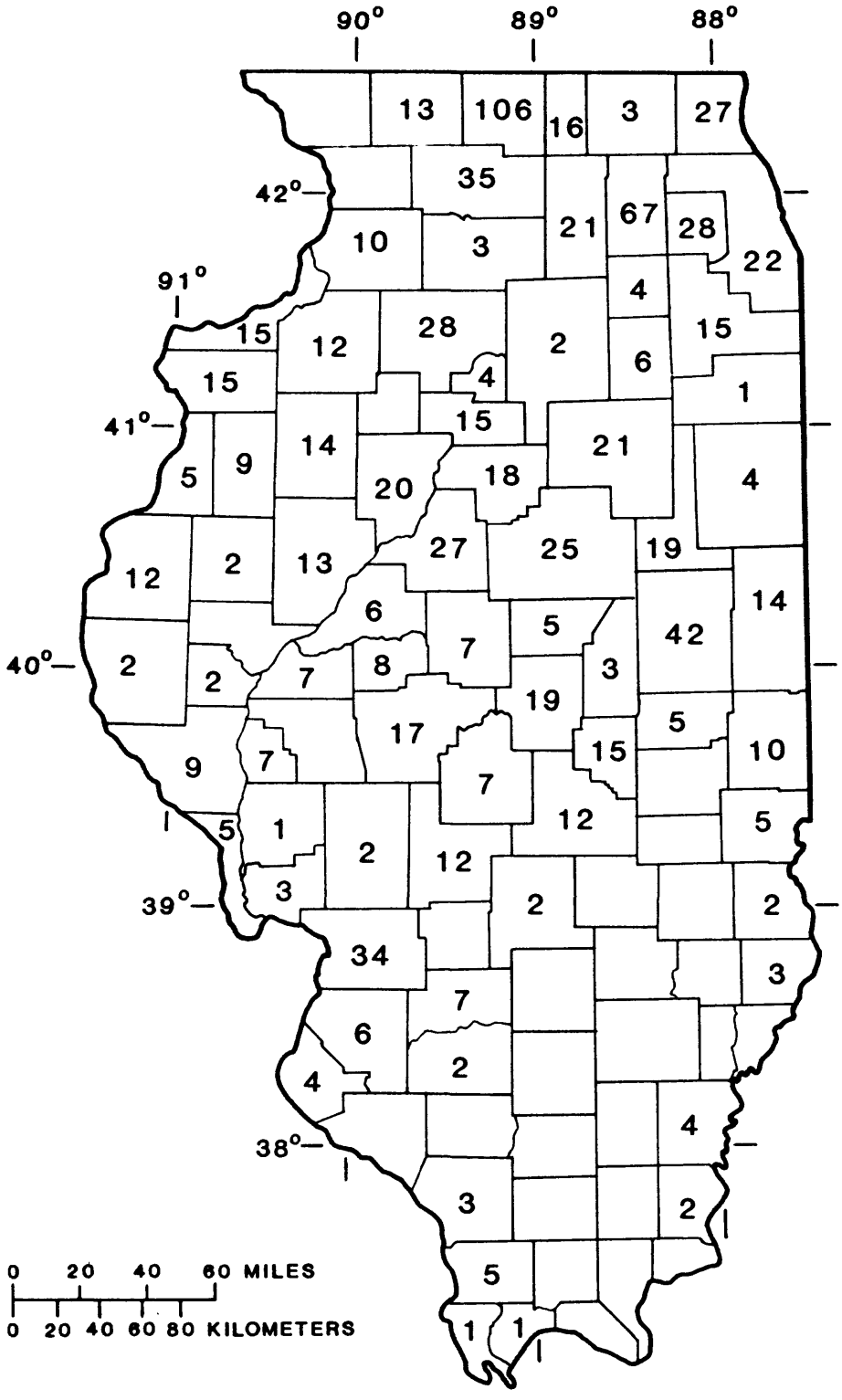


Figure 11.--Numbers of wells, by county, in the ground-water observation network.

operated and maintained on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Va., and on PR1ME computers in District offices throughout the Nation as part of the Distributed Information System (DIS). Data may be obtained from WATSTORE through the 46 district offices of the Water Resources Division. General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, VA 22092

or

U.S. Geological Survey
Water Resources Division
4th Floor
102 East Main Street
Urbana, IL 61801.

NAWDEX

The National Water-Data Exchange (NAWDEX) is a nationwide program managed by the U.S. Geological Survey to assist users of water data or water-related data in identifying, locating, and acquiring needed data. It is a national confederation of water-oriented organizations working together to make their data more readily accessible and to facilitate a more efficient exchange of water data.

Services are available through a Program Office at the Geological Survey National Center in Reston, Va., and a nationwide network of Assistance Centers in 45 States and Puerto Rico, which provide local and convenient access to NAWDEX facilities. A directory that provides names of organizations and persons to contact, as well as addresses, telephone numbers, and office hours for each of these organizations is available on request (Josefson and Blackwell, 1982).

NAWDEX can assist any organization or individual in identifying and locating water data. To accomplish this service, NAWDEX maintains a computerized Master Water-Data Index which identifies sites for which water data are available, the type of data available for each site, and the organization retaining the data. NAWDEX also maintains a Water-Data Sources Directory identifying organizations from which water data may be obtained. In addition, NAWDEX has direct access to some large water-data bases of its members and has reciprocal agreements for the exchange of services with others.

For additional information concerning the NAWDEX program or its services contact:

Program Office
National Water-Data Exchange (NAWDEX)
U.S. Geological Survey
421 National Center
12201 Sunrise Valley Drive
Reston, VA 22092

Telephone: (703) 648-5663
FTS 959-5663

Hours: 7:45 to 4:15 eastern time

or

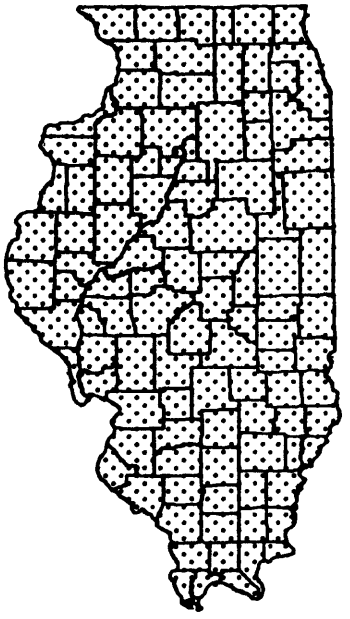
NAWDEX ASSISTANCE CENTER
Illinois
U.S. Geological Survey
Water Resources Division
4th Floor
102 East Main Street
Urbana, IL 61801

Telephone: (217) 398-5353
FTS 958-5353

Hours: 8:00 to 4:30 central time

DESCRIPTIONS OF PROJECTS IN 1986

IL001 SURFACE-WATER STATIONS



*** PROJECT TITLE *** Surface-Water Stations

*** PROBLEM *** Surface-water information is needed for purposes of surveillance, planning, design, hazard warning, operation, and management, in water-related fields such as water supply, hydroelectric power, flood control, irrigation, bridge and culvert design, wildlife management, pollution abatement, flood-plain management, and water-resources development. To provide this information an appropriate data base is necessary.

*** OBJECTIVES *** A. To collect surface-water data sufficient to satisfy needs for current-purpose uses, such as (1) assessment of water resources, (2) operation of reservoirs or industries, (3) forecasting, (4) disposal of wastes and pollution controls, (5) discharge data to accompany water-quality measurements, (6) compact and legal requirements, and (7) research or special studies.

B. To collect data necessary for analytical studies to define for any location the statistical properties of, and trends in, the occurrence of water in streams, lakes, estuaries, etc., for use in planning and design.

*** APPROACH *** Standard methods of data collection will be used as described in the series, "Techniques of Water Resources Investigations of the United States Geological Survey." Partial-record gaging will be used instead of complete-record gaging where it serves the required purpose.

*** SUMMARY OF RESULTS *** Routine data collection for surface water was done for 138 continuous-record stations, 23 partial-record stations, 12 stage only stations, and 2 miscellaneous-measurement stations. Record flood measurements were made on the Du Page River in September due to heavy rains.

*** PLANS NEXT YEAR *** Continue surface-water data collection with modifications to the network. Plan to complete installation of an acoustical velocity meter at the gaging station at Illinois River at Meredosia.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Illinois Statewide

*** PROJECT CHIEF *** Elmer E. Zuehls, Jr.

*** PERIOD OF PROJECT *** Continuous since July 1930

*** COOPERATORS ***

Illinois Department of Transportation, Division of Water Resources
Illinois Department of Energy and Natural Resources, State Water Survey
Metropolitan Sanitary District of Greater Chicago
Bloomington and Normal Sanitary District
Forest Preserve District of Cook County
City of Springfield
City of Decatur
U.S. Army Corps of Engineers
Rock Island District
St. Louis District
Louisville District
Chicago District

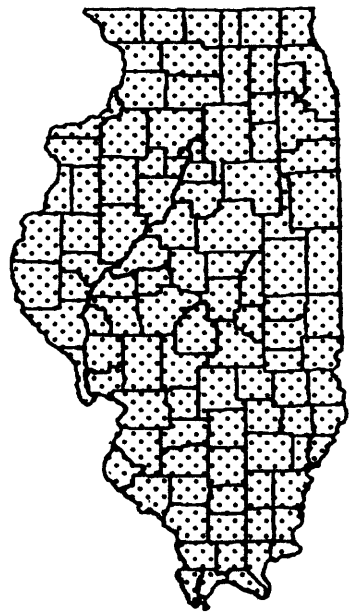
*** COMPLETED REPORTS ***

Stahl, R. L., Fitzgerald, K. K., Richards, T. E., and Hayes, P. D., 1986, Water resources data--Illinois, water year 1985, Volume 1. Illinois except Illinois River basin: U.S. Geological Survey Water-Data Report IL-85-1, 444 p.

Fitzgerald, K. K., Hayes, P. D., Richards, T. E., and Stahl, R. L., 1986, Water resources data--Illinois, water year 1985, Volume 2. Illinois River basin: U.S. Geological Survey Water-Data Report IL-85-2, 397 p.

IL002 GROUND-WATER STATIONS

*** PROJECT TITLE *** Ground-Water Stations



*** PROBLEM *** Water-resource planning and ground-water quantity and quality assessment require a statewide base level of relatively standardized data. In Illinois, concentrated urbanization in the northeastern Chicago area and intense farming and mining in much of the State require monitoring of ground water to assess the the impact of man's activities on existing and potential water uses.

*** OBJECTIVES *** To provide a high quality of data from a network of monitoring stations across the State and to achieve timely dissemination of data from this network, to all potential users, in a readily usable form.

*** APPROACH *** Coordinate ground-water data gathering efforts with State, local, and other Federal agencies in Illinois. Efforts will be directed to having all participants use current and uniform data collection and reporting procedures. Data collection is planned to meet site-specific

needs and to provide a statewide baseline of information from which to evaluate the general status of the State's ground-water quantity and quality.

*** SUMMARY OF RESULTS *** Measured water levels at two wells in Du Page County and one well in Bureau County. Published data and plotted hydrographs of historic data.

*** PLANS NEXT YEAR *** Continue water-level data collection.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Illinois Statewide

*** PROJECT CHIEF *** Gary O. Balding

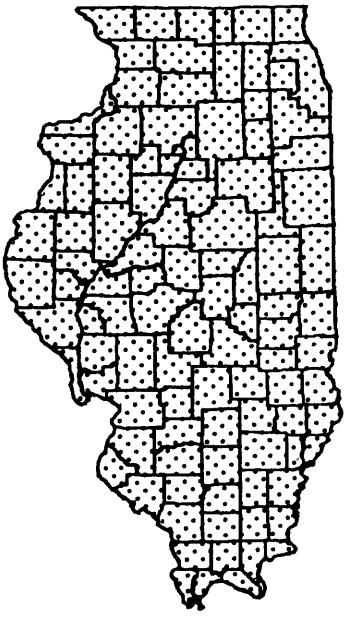
*** PERIOD OF PROJECT *** Continuous since April 1982

*** COMPLETED REPORTS ***

Fitzgerald, K. K., Hayes, P. D., Richards, T. E., and Stahl, R. L., 1986, Water resources data--Illinois, water year 1985, Volume 2. Illinois River basin: U.S. Geological Survey Water-Data Report IL-85-2, 397 p.

IL003 WATER-QUALITY STATIONS

*** PROJECT TITLE *** Water-Quality Stations



*** PROBLEM *** Water-resource planning and water-quality assessment require a statewide base level of relatively standardized data. In Illinois, dense urbanization, especially in the northeast corner, and intense farming and mining in other parts of the State require monitoring to assess the impact of man's activities on existing and potential water uses.

*** OBJECTIVES *** To provide high quality data from an extensive and coherent network of stations across the State. To achieve timely dissemination of data from this network, to all potential users, in a readily usable form.

*** APPROACH *** Coordinate surface-water-quality data gathering efforts among the Survey and State, local, and other Federal agencies in Illinois. Efforts will be directed toward having all participants use current and uniform sampling, analytical, and data reporting procedures. Sampling and data collection are tailored to meet site-specific needs and supply a baseline of information from which to evaluate the general nature of the State's surface-water quality.

*** SUMMARY OF RESULTS *** Quality assurance (QA) programs applied to field data collection and direct-service laboratory activities with Illinois Environmental Protection Agency (IEPA) have continued. All data from IEPA and Water Resources Division (WRD) laboratories have been reviewed and prepared for publication. Discharge values have been applied to the chemical data where possible.

*** PLANS NEXT YEAR *** Continue data collection and quality assurance at about 200 stations.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Illinois Statewide

*** PROJECT CHIEF *** Kathleen K. Fitzgerald

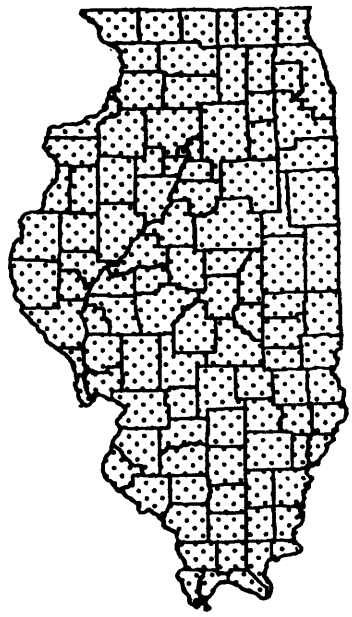
*** PERIOD OF PROJECT *** Continuous since June 1967

*** COOPERATORS ***
Illinois Environmental Protection Agency, Division of Water Pollution Control
Metropolitan Sanitary District of Greater Chicago

*** COMPLETED REPORTS ***
Stahl, R. L., Fitzgerald, K. K., Richards, T. E., and Hayes, P. D., 1986, Water resources data--Illinois, water year 1985, Volume 1. Illinois except Illinois River basin: U.S. Geological Survey Water-Data Report IL-85-1, 444 p.

Fitzgerald, K. K., Hayes, P. D., Richards, T. E., and Stahl, R. L., 1986, Water resources data--Illinois, water year 1985, Volume 2. Illinois River basin: U.S. Geological Survey Water-Data Report IL-85-2, 397 p.

IL004 SEDIMENT STATIONS



*** PROJECT TITLE *** Sediment Stations

*** PROBLEM *** Water-resource planning and water-quality assessment require a nationwide base level of information. Sediment concentrations and discharges in streams must be defined and monitored. A large percentage of the land in Illinois is devoted to agriculture whereby the land is exposed to erosion. Recent studies conducted under Section 208 of Public Law 92-500 have suggested sediment may be a major cause of water quality degradation in Illinois. Other activities, such as highway construction and industrial and residential development, contribute sediment to streams. Planning and regulatory agencies need a data base for evaluation of sediment transport in streams.

*** OBJECTIVES *** To provide a data bank for evaluating sediment problems in Illinois and a base from which the effectiveness of erosion control programs can be evaluated for their effect on water quality. To contribute to the national bank of sediment data for use in broad Federal and State planning and action programs and to provide data for Federal management of interstate waters.

*** APPROACH *** Establish and operate a network of sediment stations on Illinois streams to develop records of daily discharge of suspended sediment. Suspended-sediment stations will be located at long-term continuous-record surface-water discharge stations and will be used to establish relations between suspended-sediment discharge and surface-water discharge. These relations will be used to estimate long-term suspended-sediment yields of selected basins and predominant land use areas. Supplementary information at most stations will include particle-size determinations of suspended-sediment and bed-material samples.

*** SUMMARY OF RESULTS *** Suspended-sediment samples were collected and analyzed, and daily suspended-sediment concentrations and discharges and instantaneous suspended-sediment discharges for particle-size determinations were computed for nine sites.

*** PLANS NEXT YEAR *** Prepare and publish the 1986 water year suspended-sediment data. Collect and analyze samples and compute suspended-sediment discharge record for five sites.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Illinois Statewide

*** PROJECT CHIEF *** Lawrence J. Mansue

*** PERIOD OF PROJECT *** Continuous since January 1976

*** COOPERATORS ***
Metropolitan Sanitary District of Greater Chicago
U.S. Army Corps of Engineers
Rock Island District
St. Louis District
Chicago District

*** COMPLETED REPORTS ***
Stahl, R. L., Fitzgerald, K. K., Richards, T. E., and Hayes, P. D., 1986, Water resources data--Illinois, water year 1985, Volume 1. Illinois except Illinois River basin: U.S. Geological Survey Water-Data Report IL-85-1, 444 p.

Fitzgerald, K. K., Hayes, P. D., Richards, T. E., and Stahl, R. L., 1986, Water resources data--Illinois, water year 1985, Volume 2. Illinois River basin: U.S. Geological Survey Water-Data Report IL-85-2, 397 p.

IL005 PRECIPITATION CHEMISTRY DATA BASE

*** PROJECT TITLE *** National Atmospheric Deposition Chemistry Data Base

*** PROBLEM *** Precipitation data from the National Atmospheric Deposition Program (NADP) needs to be stored in the National Water Information System (NWIS) on a PR1ME minicomputer so that the data can be accessed by users nationally.

*** OBJECTIVES *** (1) The data received from Colorado State University are to be reformatted for entry into a data base on the Illinois District PR1ME. (2) The data will be entered into a data base on the PR1ME. (3) The data will be made available to users throughout the Nation.

*** APPROACH *** A computer program will be written to reformat the precipitation data. The data will then be entered into a data base on the PR1ME. This data base will interface with NWIS, and the data will be made available to outside users.

*** SUMMARY OF RESULTS *** Computer program has been written to convert data received from Colorado State University into a format that can be used to enter data into the water-quality data base on the PR1ME.

*** PLANS FOR NEXT YEAR *** Begin routine entry of data into data base and make data available to outside users.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

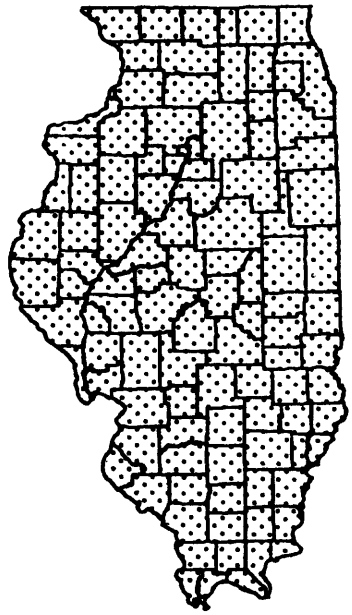
*** FIELD LOCATION *** Topical Research. Scope is Nationwide.

*** PROJECT CHIEF *** Kathleen K. Fitzgerald

*** PERIOD OF PROJECT *** Continuous since May 1986

IL006 FLOOD INVESTIGATIONS

*** PROJECT TITLE *** Flood Investigations



*** PROBLEM *** The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 provide for the operation of a flood-insurance program. The Federal Emergency Management Agency (FEMA) needs flood studies in selected areas to determine applicable flood-insurance premium rates.

*** OBJECTIVES *** To conduct the necessary hydrologic and hydraulic evaluations and studies of areas assigned by FEMA and to present the results in an appropriate format.

*** APPROACH *** To conduct the necessary evaluations or to conduct surveys by ground or photogrammetric methods. Determine flood-discharge frequency relationships using local historical information, gaging-station records, or other applicable information. Determine water-surface profiles using step-backwater models or by other acceptable methods and furnish the results in reports prepared to FEMA specifications.

*** SUMMARY OF RESULTS *** Federal Emergency Management Agency (FEMA) limited-detail flood-insurance studies were completed for Logan, De Witt, and Menard Counties. Studies for the cities of Wenona and Morrison were prepared and are in the review process.

*** PLANS NEXT YEAR *** Completion of nine limited-detail flood-insurance studies.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Illinois Statewide

*** PROJECT CHIEF *** Elmer E. Zuehls, Jr.

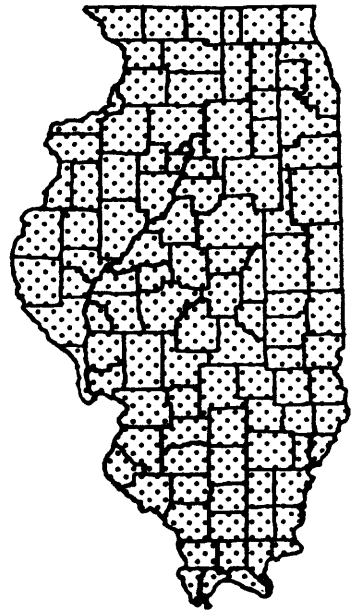
*** PERIOD OF PROJECT *** July 1972 to September 1979
April 1984 to September 1987

*** COOPERATOR ***
Department of Housing and Urban Development, Federal Emergency Management Agency

*** PLANNED REPORTS ***
Flood Insurance Study, City of Wenona, Illinois
Flood Insurance Study, City of Morrison, Illinois
Flood Insurance Study, Village of Arthur, Illinois
Flood Insurance Study, Village of Dowell, Illinois
Flood Insurance Study, City of Monticello, Illinois
Flood Insurance Study, Village of Muddy, Illinois
Flood Insurance Study, City of Pearl City, Illinois
Flood Insurance Study, City of Herrin, Illinois
Flood Insurance Study, City of Hanover, Illinois

IL007 WATER USE

*** PROJECT TITLE *** Illinois Water Use Data Program



*** PROBLEM *** A water supply is adequate or not depending upon present and future demands. Information is being collected in great detail describing quantity and quality of available water in Illinois. However, water use inventories generally have been conducted only intermittently or when a water supply has been adversely affected. Competing demands for water in Illinois dictate that adequate water use information is essential for the proper distribution of available supplies.

*** OBJECTIVES *** To conduct a comprehensive, continuing, and authoritative water use inventory throughout the State of Illinois as a basis for present analyses and future projections. To develop and operate water use inventories that will be responsive to the data needs of users at the local, State, and national levels. To collect, store, and disseminate water use data to complement the data on availability and quality of the State's water resources.

*** APPROACH *** Responsibilities will be divided between the Illinois State Water Survey (ISWS) and the U.S. Geological Survey (USGS). The ISWS will collect water use withdrawal data by mailing questionnaires to water users throughout the State. The responses will be classified by water use category (public system, self-supplied industry, rural, fish and wildlife, agriculture)

and aggregated by user category and location (county, hydrologic unit, aquifer, township). These aggregated data will then be entered into the National Water Use Data System (NWUDS). The USGS will, in a similar manner, collect, classify, aggregate, and prepare for entry in State files and into NWUDS water use return data. The USGS will coordinate the collection of water use data and maintain standards of data collection that will meet the national needs.

*** SUMMARY OF RESULTS *** Completed collection of 1984 water withdrawal, delivery, release, consumption, and return data from municipal water managers and private water users of two Illinois cities. Discharge measurements made at several industrial release locations in Rockford, Illinois, demonstrated that the reliability of release data varies widely. In cooperation with the Illinois State Water Survey, the Illinois water withdrawal data for 1984 have been collected and entered into NWUDS, and the 1985 water withdrawals and consumptive uses have been collected, aggregated, and categorized for the "Estimated Use of Water in the United States, 1985" report. In cooperation with the Illinois Environmental Protection Agency, the 1985 sewage treatment plant and industrial daily mean discharges for Illinois have been collected and entered into computer files.

*** PLANS NEXT YEAR *** Complete report. Enter 1985 water withdrawals into NWUDS and prepare sewage treatment and industrial data for entry into the State Water Use Data Systsm (SWUDS) and NWUDS.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Illinois Statewide

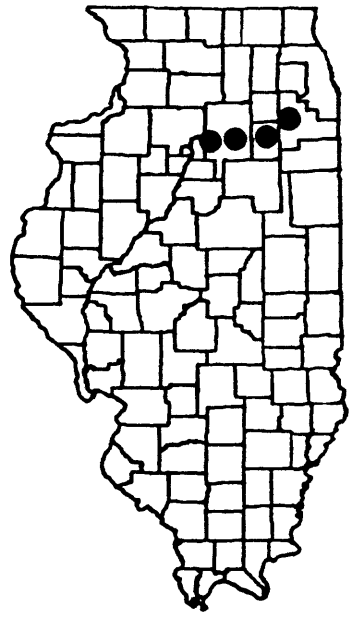
*** PROJECT CHIEF *** John K. LaTour

*** PERIOD OF PROJECT *** Continuous since March 1978

*** COOPERATORS ***
Board of Trustees of the University of Illinois, State Water Survey
Illinois Environmental Protection Agency

*** PLANNED REPORT ***
Water Use in Kankakee and Rockford, Illinois, in 1984

IL027 DAM RATINGS



*** PROJECT TITLE *** Dam Site Rating Study for Illinois River

*** PROBLEM *** Because of regulation of flows on the Illinois River by powerplants and navigation dams, adequate discharge ratings are needed to ensure that release requirements into the river below the dams are being met. Discharge ratings are relations between discharge, stage, and opening of gates used to regulate discharge. Existing ratings (1) have not been verified with field measurements, (2) may have changed due to rehabilitation of the dams, or (3) may not be accurate if based on a limited number of field measurements.

*** OBJECTIVE *** Develop methods for accurately determining the discharge of the Illinois River at Dresden Island, Marseilles, and Starved Rock Dams and the Des Plaines River at Brandon Road Dam.

*** APPROACH *** Discharge measurements will be made at Brandon Road, Dresden Island, Marseilles, and Starved Rock Dams. The measurements will be used to determine ratings for discharge controlled by tainter gates, headgates, and valves used to fill and empty locks. Measurements will be made under hydrologic conditions that are suitable for determining poorly-defined portions of existing ratings and ratings that may have changed because of structure rehabilitation. Discharge will be measured in the main channel, in forebays at Dresden Island Dam, in the Marseilles Canal, and in the headrace of the Illinois Power and Light Company hydroelectric powerplant at Marseilles.

*** SUMMARY OF RESULTS *** Measurements completed, including lock volumetric measurements at four dams (Brandon Road, Dresdan Island, Marseilles, and Starved Rock). Ratings were developed. First draft of report was written. Project complete except report.

*** PLANS NEXT YEAR *** Publish report.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** North-central Illinois

*** PROJECT CHIEF *** Dean M. Mades

*** PERIOD OF PROJECT *** October 1977 to September 1981
October 1983 to September 1986

*** COOPERATOR ***
U.S. Army Corps of Engineers, Rock Island District

*** PLANNED REPORT ***
Stage-Discharge Relations at Dams on the Illinois Waterway

IL043 EROSION AT SHEFFIELD SITE

*** PROJECT TITLE *** Erosion and Landform Modification at Sheffield, Illinois, Low-Level Radioactive-Waste Disposal Site

*** PROBLEM *** Long-term retention of low-level radioactive wastes at the Sheffield radioactive-waste disposal site requires maintenance of the integrity of burial trenches and their caps as erosion reduces the surface and removes soil from exposed trench walls. Erosion can cause the following problems: (1) Reduction of stability of caps because of steepened slopes caused by gully and channel erosion; (2) slope failure due to infiltration; (3) encroachment of valleys upon trenches because of long-term landform modification; and (4) increased sediment yield to streams because of increased runoff and decreased cover.

*** OBJECTIVES *** (1) To determine rainfall-runoff relations for the site; (2) measurement of sediment yield and determination of the relationship of sediment discharge to runoff for the site; (3) determination of the types and rates of geomorphic change within the area; (4) determination of potential for erosion and slumping and identification of specific problem areas; and (5) development of a data base to which changes caused by changing practices on the site can be compared.

*** APPROACH *** Gaging stations equipped with stage recorders and automatic samplers will be established to collect data to compute sediment discharge from four watersheds less than 10 acres, three of which will be located on-site to evaluate erosion rates, and one located off-site as an experimental control. Runoff and sediment discharge from four small watersheds (each under an acre in size), two located within the control watershed, will be computed from data obtained by dekaport divisor systems. Five recording rain gages will provide rainfall distribution data for the site and control watershed. Photographic surveys and channel cross sections will be made to aid in defining land-surface changes. Data describing precipitation, runoff, and sediment discharge will be used with a precipitation-runoff model to evaluate long-term sediment yields from the study areas.

*** SUMMARY OF RESULTS *** Terminated data collection. Completed analysis of data returned from lab. Wrote rough draft of final report.

*** PLANS NEXT YEAR *** Complete report and submit for Director's approval.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** North-central Illinois

*** PROJECT CHIEF *** John R. Gray

*** PERIOD OF PROJECT *** October 1980 to September 1986

*** PLANNED REPORT ***
Runoff, Sediment Transport, and Landform Modifications at Sheffield, Illinois

IL044 SHEFFIELD UNSATURATED FLOW

*** PROJECT TITLE *** Hydrology of Unsaturated Flow through Porous Media at the Low-Level Radioactive-Waste Disposal Site near Sheffield, Illinois

*** PROBLEM *** In developing criteria to be used in selecting future radioactive-waste disposal sites and improving operations at current sites, it is necessary to understand the mechanisms that control transport of radionuclides by soil moisture flow in unsaturated porous media. Research in this area has been directed mainly towards theoretical aspects and laboratory experiments of soil moisture movement in the root zone. The tunnel at Sheffield beneath four trenches offers the opportunity to study moisture movement in a field situation through as much as 35 feet of unsaturated sediments. Instruments will be installed on the land surface and in the tunnel to obtain data on soil moisture movement to the water table and any radionuclide migration from trenches to the water table. Existing techniques and instrumentation will have to be modified to fit unusual conditions.

*** OBJECTIVES *** To qualify and quantify the mechanisms that control the movement of water and transport of radionuclides from disposal trenches through the unsaturated zone to the water table. The soil moisture data will provide a basis for research on burial site design and construction techniques. As an example, these data would provide the basis for evaluating new trench cap construction techniques for reducing infiltration and in the design of radionuclide waste trenches.

*** APPROACH *** Soil moisture and suction data will be obtained in the field using a neutron soil moisture probe and tensiometers. Soil moisture chemistry will be determined from samples collected with soil suction lysimeters. Gamma spectral logging will be used to monitor changes in radionuclide content of soil and soil water. Evapotranspiration will be computed using data obtained from a meteorological station. Tracers will be used to determine dispersivities. A model of unsaturated moisture flow will be used.

*** SUMMARY OF RESULTS *** Designed and installed instrumentation for tracking individual wetting fronts through a sand unit and for evaluating the tunnel's influence on unsaturated flow patterns. Completed quarterly and annual water-quality sampling. No identifiable trends in ground-water quality were detected in wells adjacent to the tunnel. The tritium continues to migrate from waste trenches through the unsaturated zone. Organic chemicals were also detected in subtrench pore water. The timing, rate, and quantity of water moving through the unsaturated zone annually is quite variable and appears to be directly dependent on annual meteorological patterns.

*** PLANS NEXT YEAR *** Evaluate data from newly installed instrumentation. Continue water-quality sampling. Continue monitoring long-term trends in water and leachate movement. Begin preparation of data and final reports.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** North-central Illinois

*** PROJECT CHIEF *** Patrick C. Mills

*** PERIOD OF PROJECT *** October 1980 to September 1989

*** PLANNED REPORTS ***

Water and Tritium Movement Through the Unsaturated Zone at a Low-Level Radioactive-Waste Disposal Site near Sheffield, Illinois

Water Movement Through Trench Covers at a Low-Level Radioactive-Waste Site

*** REPORTS IN PROCESS ***

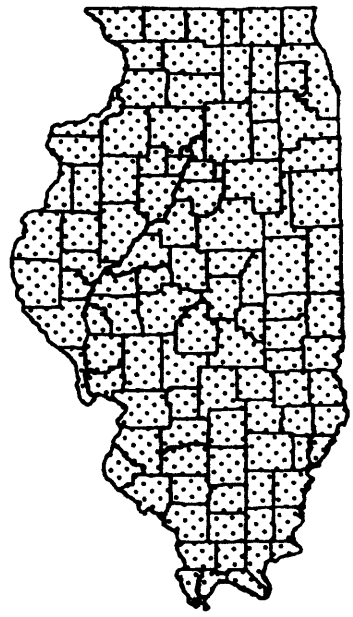
Microclimate and Evapotranspiration of Vegetated Waste-Trench Covers at a Low-Level Radioactive-Waste Disposal Site in Northwestern Illinois

Hydrogeochemistry of the Unsaturated Zone at a Low-Level Radioactive-Waste Disposal Site near Sheffield, Illinois, 1982-84

*** COMPLETED REPORT ***

Healy, R. W., deVries, M. P., and Striegl, R. G., 1986, Concepts and data-collection techniques used in a study of the unsaturated zone at a low-level radioactive-waste disposal site near Sheffield, Illinois: U.S. Geological Survey Water-Resources Investigtions 86-4228, 37 p.

IL062 GROUND-WATER QUALITY-WATER NETWORK



*** PROJECT TITLE *** Illinois Ground-Water Observation Network

*** PROBLEM *** Increasing water needs and contamination of ground-water resources in Illinois and throughout the Nation make it necessary to evaluate present and estimate future quantity and quality of these resources. Planning, management, and regulatory agencies need reliable hydrologic information to manage and protect Illinois' water resources. Long-term records of ground-water levels and quality are needed to evaluate the effects of climatic variations on the ground-water system, to provide a consistent data base from which to evaluate effects of development and use, and to aid in the prediction of the quality and quantity of future supplies.

*** OBJECTIVES *** (1) Establish a network of wells representative of major geohydrologic units in Illinois. (2) Operate a ground-water observation network to collect water-level and water-quality data to (a) describe baseline conditions in each geohydrologic unit, (b) investigate trends in ground-water quality and quantity, and (c) establish a manageable data base that can be used in preparing periodic assessments of Illinois' ground-water resources.

*** APPROACH *** (1) Select approximately 400 wells to represent major geohydrologic units in Illinois. (2) Complete well schedules and enter data into the National Water Data Storage and Retrieval System-Ground Water Site Inventory (WATSTORE-GWSI). (3) Prepare in-house guidelines for sampling each well type based on construction and accessibility. (4) Measure water levels and sample wells for a group of water-quality characteristics agreed upon by the Illinois Environmental Protection Agency and U.S. Geological Survey. (5) Prepare reports annually on progress and during FY 87 to analyze changes observed during first 3 years and determine long-term network sampling plans.

*** SUMMARY OF RESULTS *** The network of wells has expanded significantly, with over 1,200 public water-supply wells having been sampled. Constituents being analyzed for include general inorganics, volatile organics, and soluble organics.

*** PLANS NEXT YEAR *** Sample about 24 wells on a quarterly basis with that data being used for "trend" analysis. Continue sampling of public water-supply wells on a county by county basis until all such wells in the State are sampled. Publish data reports for 1985 and 1986 water years.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Illinois Statewide

*** PROJECT CHIEF *** David C. Voelker

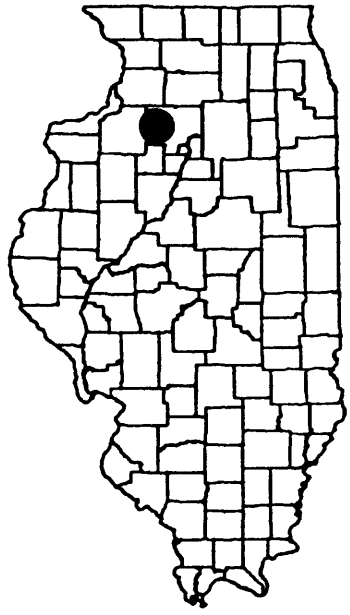
*** PERIOD OF PROJECT *** October 1983 to September 1987

*** COOPERATOR ***
Illinois Environmental Protection Agency

*** PLANNED REPORTS ***
Ground-Water Observation Network--Well Data, 1985
Ground-Water Observation Network--Well Data, 1986
Observation of Ground-Water Levels and Quality in Illinois

*** COMPLETED REPORT ***
Voelker, D. C., 1986, Observation-well network in Illinois, 1984: U.S. Geological Survey Open-File Report 86-416(W), 108 p.

IL063 GAS TRANSPORT--SHEFFIELD



*** PROJECT TITLE *** Transport of Radioactive Gases and Exchange of ^{14}C in the Unsaturated Zone at a Low-Level Radioactive-Waste Site, Sheffield, Illinois

*** PROBLEM *** Development of site and management criteria for the underground disposal of radioactive wastes requires that mechanisms that control the transport of radionuclides to off-site areas be understood, and that the relative importance of identified transport pathways be quantified. Analyses of field data collected during fiscal years 1984 and 1985 indicated that $^{14}CO_2$ transport may be inhibited relative to CO_2 transport. The mechanism for that inhibition is not known.

*** OBJECTIVES *** To identify the major gas species responsible for the transport of radionuclides in the unsaturated zone; to determine the horizontal concentration gradient of carbon-14 dioxide and tritiated water vapor in a porous sand deposit adjacent to buried radioactive wastes; to calculate the rate of mass transport of radioactive gases in the unsaturated sand using measured concentration data; and to test the hypothesis that $^{14}CO_2$ diffusion may be inhibited by carbon-isotope exchange to the transport medium.

*** APPROACH *** Soil gas sampling tubes will be installed in glacial deposits along a line perpendicular to buried radioactive wastes. Collected gases will be analyzed to determine the partial pressures of major gases in the soil atmosphere. Carbon gases and water vapor will be separated from the soil atmosphere and the radioactivity of individual gases will be measured. Partial pressure and radioactivity data will be used to calculate the mass transport of radioactive gases through the unsaturated zone near the burial site. The potential ^{14}C exchange capacity for geologic deposits collected from the site will be tested by batch experiments.

*** SUMMARY OF RESULTS *** Field work has been completed and laboratory analyses of gas samples are complete. Statistical analysis of field data is in progress. A 2-D finite-difference model for gas transport in the unsaturated zone has been coded, and computer simulations of field information are in progress. Laboratory experiments of "C" exchange are in progress.

*** PLANS NEXT YEAR *** Continue with data analysis and with laboratory experiments. Complete project report.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

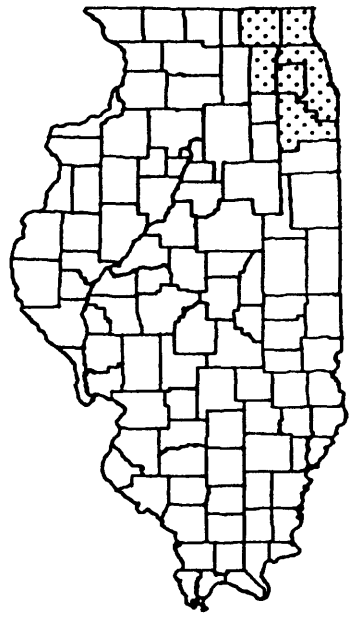
*** FIELD LOCATION *** North-Central Illinois

*** PROJECT CHIEF *** Robert G. Striegl

*** PERIOD OF PROJECT *** October 1983 to September 1987

*** PLANNED REPORTS ***
Distribution of Gases in the Unsaturated Zone at Low-Level Radioactive-Waste Site near Sheffield, Illinois
Journal article on Gas Transport in the Unsaturated Zone

IL066 SALINITY INCREASES, ILLINOIS



*** PROJECT TITLE *** Salinity Increases in Cambrian-Age Aquifers in Northeastern Illinois

*** PROBLEM *** During the past few decades several municipalities in northeastern Illinois have reported increasing salinity of water from Cambrian-age aquifers. The locations, magnitude, and causes of salinity increases are not known and need to be better understood for several reasons. The continued availability of a potable water supply is a concern. Salinity increases in northeastern Illinois could affect water supplies in southeastern Wisconsin because of the large cone of depression caused by pumping in northeastern Illinois. If the Chicago-Milwaukee model, being generated by the Regional Aquifer Systems Analysis (RASA), is to be used as a predictive tool, then the water quality of the Cambrian-age aquifers needs to be better understood.

*** OBJECTIVES *** To determine if a causal relation exists between salinity increases and one or more of the following: Location and density of pumping, pumping rate, pumping period, depth of well, well construction, improperly abandoned wells, geologic structure, variable thickness in the confining unit, and occurrence of shale lenses in the upper part of the Mount Simon sandstone.

*** APPROACH *** Maps of the possible causes will be compared with maps showing areal extent and magnitude of water-quality changes. The water-quality change maps will also be compared to available maps of drawdown and potentiometric surface.

*** SUMMARY OF RESULTS *** The basic water-quality-evaluation work was completed. Report has been partially written. Project complete except report.

*** PLANS NEXT YEAR *** Complete and publish report.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Northeastern Illinois

*** PROJECT CHIEF *** James R. Nicholas

*** PERIOD OF PROJECT *** October 1984 to September 1986

*** PLANNED REPORT ***
Causes of Salinity Increases in Cambrian-age Aquifers in Northeastern Illinois

IL067 FRACTURED-ROCK HYDROLOGY

*** PROJECT TITLE *** Ground-Water Flow and Tritium Movement in Fractured Dolomite near Chicago, Illinois

*** PROBLEM *** Tritium is present in the dolomite aquifer beneath a formerly used low-level radioactive-waste disposal site located in a forest preserve near Chicago. Tritium movement is known on a large scale, but specific flow paths are not known because the dolomite is fractured. Determining the hydrogeologic factors that govern rates and directions of ground-water flow and tritium movement will yield needed information that is transferable to other disposal sites.

*** OBJECTIVES *** (1) Determine fracture geometry. (2) Quantify hydraulic properties of the fractured rock. (3) Quantify flow rates and directions and the transport properties of the rock. (4) Evaluate the applicability of the discrete-fracture approach to the data. (5) Evaluate the applicability of the continuum approach to the data.

*** APPROACH *** (1) Drill about seven test wells. (2) Run borehole-geophysical logs in each well. (3) Perform aquifer tests using packers. (4) Perform tracer tests using packers. (5) Evaluate and analyze data. (6) Design and use ground-water flow and solute transport models to evaluate applicability of discrete-fracture and continuum approaches.

*** SUMMARY OF RESULTS *** Two conference papers summarizing the approach to and preliminary results of aquifer tests were presented. Completed field work including drilling four new test wells, borehole geophysics, 10 aquifer tests of packed-off intervals, natural-gradient tracer test and surveying of well-head elevations by National Mapping Division. Aquifer- and tracer-test data have been analyzed. Contracted services for analysis of core and borehole-geophysical data. Continued excellent cooperation with Allen Shapiro, Northeastern Region Research Program, Reston, Va.

*** PLANS NEXT YEAR *** Drill and log three new test wells. Run series of multi-well aquifer and tracer tests. Begin work on one or two journal papers.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

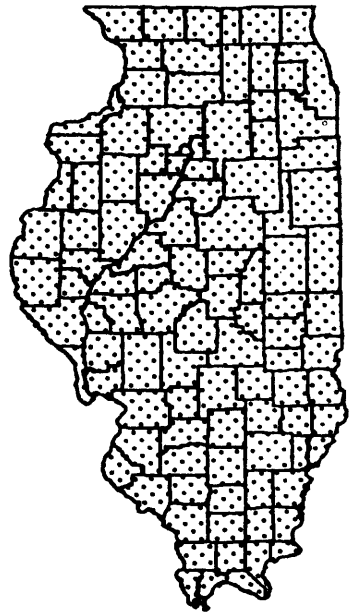
*** FIELD LOCATION *** Northeastern Illinois

*** PROJECT CHIEF *** James R. Nicholas

*** PERIOD OF PROJECT *** October 1984 to September 1988

*** PLANNED REPORT ***
Ground-Water Flow and Tritium Movement in Fractured Dolomite near Chicago, Illinois

IL069 PARAMETERS FOR MODELING HYDROGRAPHS



*** PROJECT TITLE *** Variability of Parameters Used in Modeling Discharge Hydrographs

*** PROBLEM *** Values for both unit-hydrograph and rainfall-loss function parameters associated with the HEC-1 model are needed for using that model to estimate discharge hydrographs for ungaged basins. The U.S. Geological Survey has developed a technique for estimating the unit-hydrograph parameters for ungaged basins in Illinois. Estimating techniques or guidelines for selection of values of parameters of the rainfall-loss function are also needed and are not currently available.

*** OBJECTIVES *** (1) To develop estimating techniques for parameters of two rainfall-loss computation methods used in the HEC-1 model. (2) To evaluate the error in estimated hydrograph shape that results from use of estimated parameter values.

*** APPROACH *** (1) Estimating techniques in the form of equations will be developed to relate STRKR values to significant available basin characteristics. (2) Individual storm and mean monthly DLTKR values will be related to climatological factors to develop an estimating technique for DLTKR. (3) Initial analysis of STRTL and CNSTL will be made to determine if estimating techniques can be developed. (4) Characteristics of hydrographs computed with estimated parameters will be compared with those of measured hydrographs.

*** SUMMARY OF RESULTS *** Techniques for estimating values of parameters for two rainfall-loss computation methods used in the U.S. Army Corps of Engineers flood-hydrograph model (HEC-1) have been developed using multiple regression analysis on calibrated data from 616 storms at 98 gaged basins. Parameter-estimating techniques were evaluated using data from 102 storms at 36 uncalibrated gaged basins. Three computed discharge hydrograph characteristics (V, Q, and T) were computed with characteristics of observed discharge hydrographs. Sensitivity analyses were performed. First draft of report has been written. Project complete except report.

*** PLANS NEXT YEAR *** Complete report and submit for Director's approval.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Illinois Statewide

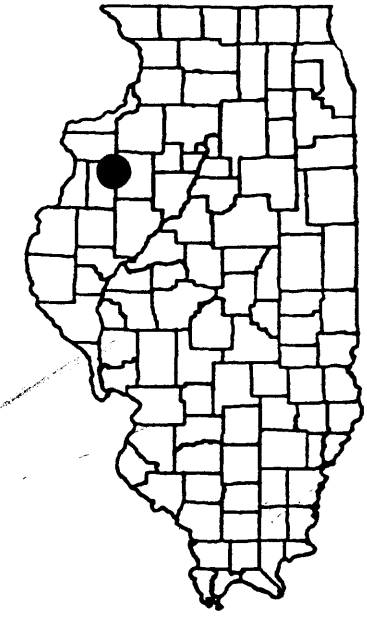
*** PROJECT CHIEF *** Linda S. Weiss

*** PERIOD OF PROJECT *** October 1984 to September 1986

*** COOPERATOR ***
Illinois Department of Transportation, Division of Water Resources

*** PLANNED REPORT ***
Parameters for Modeling Hydrographs

IL070 CEDAR CREEK WATER-QUALITY ASSESSMENT



*** PROJECT TITLE *** Cedar Creek Water-Quality Assessment; Impact of Storm Runoff and Combined-Sewer Overflows from Galesburg, Illinois

*** PROBLEM *** Concentrations of dissolved oxygen and other constituents in Cedar Creek do not meet the State's water-quality standards during low flows; periods when stream quality is generally most stressed. Sediment deposits with high oxygen demands may play a major role in the creek's dissolved oxygen problems. Overflows from combined sanitary and storm sewers in Galesburg discharge to Cedar Creek and may contribute a large portion of the oxygen-demanding sediments. The impact from combined-sewer overflows and the methods used to determine those impacts are of major concern because many Illinois cities are served by combined-sewer systems.

*** OBJECTIVES *** (1) Describe the water-quality of Cedar Creek, upstream of river mile 25, during low-flow periods. (2) Identify stream reaches that do not meet the State water-quality standards. (3) Identify the cause and effect relations of processes in those reaches failing to meet standards by use of a calibrated low-flow model. (4) Identify the impact of combined-sewer overflows and storm-sewer discharges on the water quality of the creek.

*** APPROACH *** Phase I--A one-dimensional water-quality model will be calibrated and verified using data collected during low-flow periods. Water-quality data will be collected over two 24-hour periods. Measurements of sediment oxygen demand, reaeration rate, traveltime, and algal primary productivity will also be made.

Phase II--Storm event sampling of similar constituents as those sampled in Phase I as well as measurements and estimates of pollutant loads from storm sewers, combined sewer overflows, wastewater treatment facility effluent discharges, and agricultural runoff will be performed. This information will be used to determine the impact of combined sewer overflows and storm-sewer discharges on the water quality of Cedar Creek.

*** SUMMARY OF RESULTS *** A low-flow water-quality model was calibrated and verified with the data collected during Phase I (fiscal year 1985) of this project. Model simulations indicate that high sediment oxygen demands are the primary cause of low dissolved oxygen concentrations in the creek. Report preparation of the results of Phase I are well underway. A description of the methods used for both phases of this project is ready for review. Storm-event data, including effluent quality and quantity, were collected. Results of frequency of combined sewer overflow measurements indicate that storm intensity is the most important factor in causing overflows. Sediment-oxygen-demand measurements were made and corresponding bed material constituent concentrations were determined at over 35 locations in Cedar Creek and its tributaries. Sediment-oxygen demands were very high in some areas indicating severe dissolved-oxygen depletion would occur through these subreaches. Phase II data collection is nearly complete.

*** PLANS NEXT YEAR *** Finish data collection and remove all equipment from the field. Enter all data into National Water Data Storage and Retrieval System (WATSTORE) and the local data base. Interpret the data attempting to develop relations between point source pollutant loads, precipitation characteristics, and areas of high sediment oxygen demands in the creek. Complete the report including the sections on methods, data summaries, low-flow phase results, and high-flow phase results of the project.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** West-central Illinois

*** PROJECT CHIEF *** Ward O. Freeman

*** PERIOD OF PROJECT *** January 1985 to September 1987

*** COOPERATOR ***
Illinois Environmental Protection Agency

*** PLANNED REPORT ***
Assessment of the Water Quality in Cedar Creek and the Impact of Storm Runoff

IL072 McHENRY DAM

*** PROJECT TITLE *** Dam Site Rating for McHenry Dam on the Fox River

*** PROBLEM *** McHenry Lock and Dam regulates reservoir storage above the dam and flow below the dam for recreation, navigation, and flood-control purposes. Releases from the dam are computed using equations based on theoretical flow over the dam and through its gates. Comparison of computed releases with discharge measured at a U.S. Geological Survey (USGS) gaging station 16 miles downstream, after adjustment based on 11 percent difference in drainage areas, indicated a need to reevaluate the coefficients used in the theoretical equations.

*** OBJECTIVE *** To develop a new or modify the existing discharge rating procedure to include a dam rating, surmerged-orifice rating, and free-orifice rating for various gate openings.

*** APPROACH *** Make discharge measurements at various pool elevations and gate settings. During flow over the dam at low to medium pool elevations, measurements will be made from a boat upstream of the dam. During high pool elevations, discharge will be measured from a boat below the dam or from a highway bridge 2.5 miles downstream. Measurements below the dam will be adjusted for the flow through the gates to obtain flow over the dam. During periods of constant gate openings, daily mean flow figures at the USGS gaging station, adjusted using the drainage-area ratio, will be used to verify the computed discharges at McHenry Dam.

*** SUMMARY OF RESULTS *** Discharge measurements have been made for all gate openings and pool elevations. Project complete except report.

*** PLANS NEXT YEAR *** Write and publish report.

*** HEADQUARTERS OFFICE *** De Kalb, Illinois

*** FIELD LOCATION *** Northern Illinois

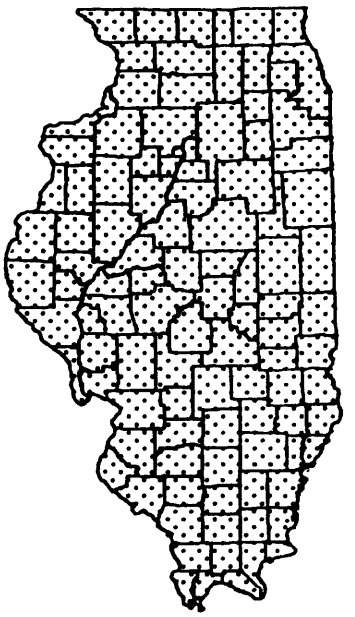
*** PROJECT CHIEF *** Gregory G. Fisk

*** PERIOD OF PROJECT *** October 1984 to September 1986

*** COOPERATOR ***
Illinois Department of Transportation, Division of Water Resources

*** PLANNED REPORT ***
Stage-Discharge Relations at McHenry Dam on the Fox River, Illinois

IL073 ILLINOIS FLOOD FREQUENCIES



*** PROJECT TITLE *** Magnitude and Frequency of Floods in Illinois

*** PROBLEM *** A large number of high annual peak discharges occurred during the period 1976 to 1983. Twnety-nine of 32 stations sampled averaged 2.6 peaks during the 8-year period that ranked among the 8 highest peaks of record at each station. In one instance, the recomputed station frequency curve gives a discharge for the 100-year flood 150 percent larger than the published value. Revised analytical procedures are available for weighting station skew, treating outliers, making two station comparisons, and computing confidence limits about a frequency curve, that improves the estimate of station frequency values over those previously published.

*** OBJECTIVES *** (1) To provide updated magnitude-frequency values for Illinois streams having 10 or more years of record. (2) To provide equations based on the latest state-of-the-art frequency analysis in a simple straightforward format for estimating magnitude frequencies for nonregulated rural streams in Illinois.

*** APPROACH *** (1) Update the peak data base. (2) Include nearby gaging stations in adjacent States to minimize "state-line" discontinuities. (3) Develop station magnitude-frequency values for recurrence intervals 2, 5, 10, 25, 50, and 100 years using Bulletin 17B guidelines. (4) Develop equations to estimate magnitude-frequency values for recurrence intervals 2, 5, 10, 25, 50, and 100 years using the Survey's statistical program "GLS/ANNIE." Peak-discharge characteristics will be related to basin characteristics.

*** SUMMARY OF RESULTS *** The National Water Data Storage and Retrieval Systsm (WATSTORE) peak-flow file was updated to include annual peak discharge values through water year 1985 for 394 streamflow stations. Magnitude and frequency values were developed for recurrence intervals 2, 5, 10, 25, 50, and 100 years at the 394 stations. Updated the WATSTORE streamflow/basin characteristic file for 268 stations that will be used to develop statewide equations to estimate magnitude-frequency values in Illinois.

*** PLANS NEXT YEAR *** Develop statewide equations to estimate 2-, 5-, 10-, 25-, 50-, and 100-year magnitude and frequency values. Prepare the final report.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Illinois Statewide

*** PROJECT CHIEF *** G. Wayne Curtis

*** PERIOD OF PROJECT *** October 1985 to September 1987

*** COOPERATOR ***
Illinois Department of Transportation, Division of Water Resources

*** PLANNED REPORT ***
Technique for estimating magnitude and frequency of floods in Illinois

IL074 RAINFALL-RUNOFF IN DU PAGE COUNTY

*** PROJECT TITLE *** Rainfall-Runoff Relationships on Small Watersheds in Du Page County, Illinois

*** PROBLEM *** Very little information exists concerning the variation in time and space of the rates and volumes of stormwater runoff in Du Page County, especially on small watersheds. The Du Page County Department of Public Works is currently developing a Stormwater Management Plan. Part of the development of this plan requires the use of a rainfall-runoff model to simulate storm-flow hydrographs. Actual rainfall-runoff data from small watersheds are needed for model calibration, and for comparing simulated and actual runoff hydrographs.

*** OBJECTIVES *** (1) To calibrate a rainfall-runoff model for use in describing the rainfall-runoff process on several small watersheds in Du Page County. (2) To test the goodness-of-fit of simulation results using another watershed to demonstrate the abil.ty of the calibrated model to accurately simulate stormwater runoff of ungaged watersheds.

*** APPROACH *** Three small watersheds, ranging from 5 to 15 square miles, will be selected for study. The three watersheds will have the following land use: one urban, one partially urbanized, and one rural. A gaging station will be operated in each of the three watersheds in order to collect records of rainfall and streamflow during the stormwater runoff periods.

A rainfall-runoff model will be calibrated using rainfall and streamflow records and basin characteristics from two watersheds. Rainfall data and basin characteristics from a third watershed will be used to simulate streamflow for subsequent comparisons to measured runoff as a test of goodness-of-fit. A range of values for parameters used as model inputs will be provided that includes results from calibrations for all three watersheds.

*** SUMMARY OF RESULTS *** Three basins were selected. Streamflow gaging stations were installed in each basin. A minimum of three rain gages were also installed in each basin. Rainfall-runoff data collection began in November 1985. Forty-two discharge measurements have been made to establish or confirm the stage-discharge relation at each gage. Indirect methods were also used to help define the stage-discharge relation at two of the gages. The peak discharge for two of the three basins occurred in September 1986. Some of the discharge and precipitation data were entered into the Watershed Data-Management System (WDMS).

*** PLANS NEXT YEAR *** Continue data collection until July 1987. Compute daily discharges for the 1986 and 1987 annual water data reports. Enter all temperature, precipitation, and discharge data into the WDMS. Calibrate the rainfall-runoff model for each of the watersheds. Test the goodness-of-fit of the calibrated model. Write a report describing the results of this project.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** Northeastern Illinois

*** PROJECT CHIEF *** Kevin A. Oberg

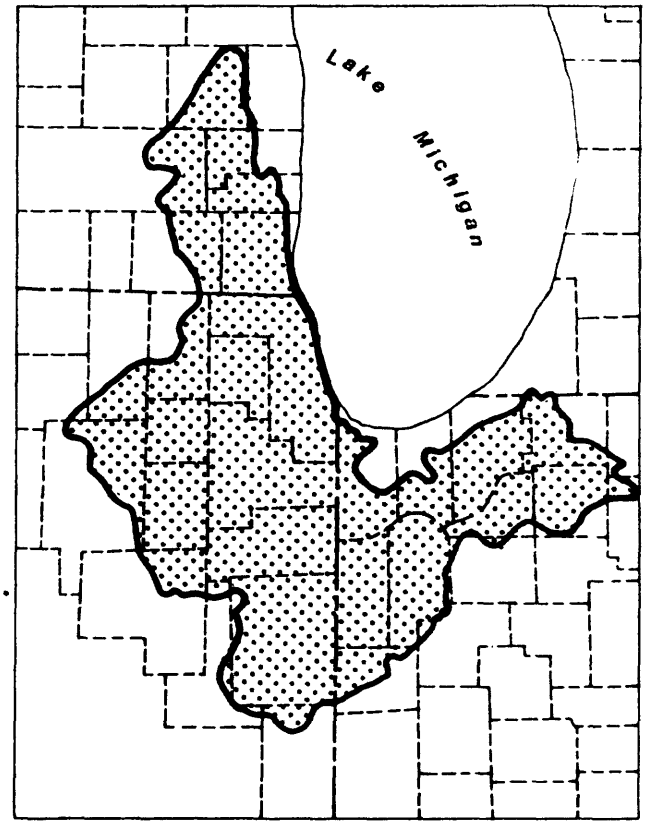
*** PERIOD OF PROJECT *** October 1985 to September 1987

*** COOPERATOR ***
Du Page County Department of Public Works

*** PLANNED REPORT ***
Modeling Rainfall and Runoff on Small Watersheds in Du Page County, Illinois

IL075 UPPER ILLINOIS RIVER BASIN

*** PROJECT TITLE *** Upper Illinois River Basin Water-Quality Assessment



*** PROBLEM *** Protecting the quality of the Nation's ground-water and surface-water resources is a priority national concern. The quality of the Nation's water resources has a direct impact on public health and on the economic success of agriculture, industry, and recreation. The impacts of degraded water quality on public health or economic success may be related to short-term or long-term effects. In 1986, the U.S. Geological Survey (USGS) initiated a National Water Quality Assessment (NAWQA) Program to help address problems related to degraded water quality. This program is in a pilot phase that will test, and modify as necessary, concepts and approaches in preparation for possible full implementation in the future. The Upper Illinois River Basin project is one of seven pilot water-quality studies initiated in the pilot phase of the NAWQA program.

*** OBJECTIVES *** (1) Provide a description of existing and past trends in surface-water-quality conditions. (2) Develop conceptual models that relate observed conditions to the sources and causes. (3) Verify the description of trends in conditions. (4) Track long-term trends in water quality. (5) Reduce the uncertainty of the description of trends. (6) Improve the understanding of the linkage between causative factors and water quality.

*** APPROACH *** A liaison committee consisting of representatives of Federal, State, and local agencies will be formed to provide a forum for the USGS to inform interested parties of NAWQA plans and findings, to seek advice, to identify existing data and reports, and to establish collaborative efforts to supplement the NAWQA program. Existing data and reports will be compiled and summarized to provide a description of past and current trends in conditions. Descriptive information that may aid in the interpretation of trends will be compiled. Simple statistical methods such as regression analysis will be used to relate observed trends to the descriptive information. New data will be collected from the operation of a fixed-location river-sampling station network and from synoptic surveys. Reports describing project plans, data, and findings will be published.

*** SUMMARY OF RESULTS *** Project staff met with personnel from nine State, Federal, and local agencies to inform them of our preliminary plan of study. A liaison committee composed of representatives from 19 agencies was formed. The committee met to discuss the plans of the national program and water-quality issues in the Upper Illinois River basin. Base maps for page-size illustrations and poster sessions were prepared. Land-use, soils, geologic, and topographic maps of the study area were obtained or ordered. A preliminary search of library indexes and reference lists yielded 140 reports that describe the quantity and quality of surface water in the study area. Water-quality data collected since mid-1970 were retrieved from National Water Data Storage and Retrieval Systsm (WATSTORE) and analyzed for a balance of cations and anions. Plans for a reconnaissance-type synoptic survey of 80 sites was performed to determine mixing characteristics and sampling conditions. Site conditions were described, photos were taken, and water temperature and specific conductance were measured at each site. A draft of work plans for fiscal year 1987 was prepared.

*** PLANS NEXT YEAR *** Existing streamflow and water-quality data will be compiled and summarized using simple statistical methods. Data summaries will include frequency distributions, annual and seasonal loads and yields, and time trends for streamflow and selected water-quality parameters. Synoptic surveys of the quality of water, suspended sediment, and bed material will be performed to describe the occurrence of metals and nutrients during steady low- and high-flow conditions. A fixed-station sampling program will be established. Maps displaying information that may be used to explain historic water-quality conditions will be digitized for use by an ARC/INFO geographic information system.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

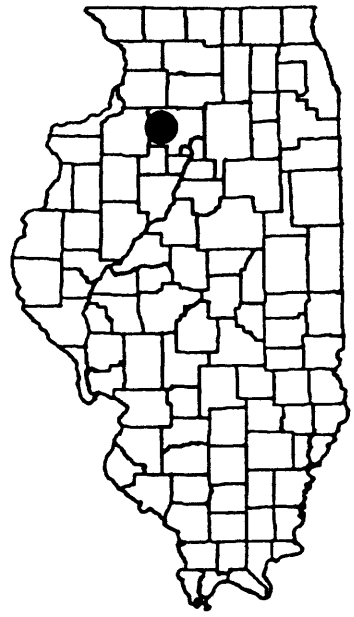
*** FIELD LOCATION *** Upper Illinois River Basin

*** PROJECT CHIEF *** Dean M. Mades

*** PERIOD OF PROJECT *** April 1986 to September 1989

*** PLANNED REPORTS ***
Preliminary plan of study
Water-quality conditions in the study area

IL076 SHEFFIELD COMPREHENSIVE REPORT



*** PROJECT TITLE *** Hydrology and Radionuclide Movement at a Low-Level Radioactive-Waste Disposal Site, Sheffield, Illinois

*** PROBLEM *** No document is available that either describes the methods and results from all research conducted at the Sheffield site, or integrates and provides an interpretation of these results. Until such a document is available, it is unlikely the full value of research at the site will be realized. The following topics have been studied at Sheffield: meteorology, surface hydrology, geology and saturated zone hydrology and unsaturated zone hydrology, chemistry and gas transport.

*** OBJECTIVE *** To write a single comprehensive report describing research and results at the Sheffield site.

*** APPROACH *** The study will be completed in the following three phases: (1) literature search, (2) summary of study results and derivation of conclusions, and (3) presentation of results. A research panel comprised of investigators in the Illinois District will conduct the three phases of work. A review panel comprised of former project chiefs and others familiar with low-level radioactive wastes will review the research panel's work.

*** SUMMARY OF RESULTS *** The first meeting of all principal investigators was held to discuss the final report format and to insure internal consistency among all chapters. Annotated outlines were completed for each contribution; the first draft of the complete annotated outline was prepared. The literature search was begun. A 10-page article discussing results was prepared for the 1986 U.S. Geological Survey Yearbook.

*** PLANS NEXT YEAR *** Literature search will be completed. The review panel will be given an opportunity to critique the report. The final report will be submitted to Headquarters for approval.

*** HEADQUARTERS OFFICE *** Urbana, Illinois

*** FIELD LOCATION *** North-central Illinois

*** PROJECT CHIEF *** Barbara J. Ryan

*** PERIOD OF PROJECT *** April 1986 to September 1987

*** PLANNED REPORTS ***

Hydrology and Radionuclide Movement at a Low-Level Radioactive-Waste Disposal Site near Sheffield, Illinois

Avenues for Low-Level Radionuclide Transport - A Case Study

(page 53 follows)

PUBLICATIONS

PUBLICATIONS

Because the number of publications pertaining to water resources in Illinois is large, the publications listed below were selected to show the types of information available to those interested in or in need of water facts. Many of these publications are available for inspection at the District Office in Urbana and at large public and university libraries.

General Information

The U.S. Geological Survey announces all its publications in a monthly catalog "New Publications of the U.S. Geological Survey." Subscriptions to this monthly listing are available free upon request to the U.S. Geological Survey, 582 National Center, Reston, VA 22092. All publications are for sale unless specifically stated otherwise. Prices, which are subject to change, are not included here. Prepayment is required and information on price and availability should be obtained from listed sales offices before placing an order. The "U.S. Geological Survey Yearbook" provides a comprehensive description of the Federal Government's largest earth-science agency; copies may be purchased at the address where professional papers are sold (see below). Summaries of research in progress and results of completed investigations are published each fiscal year, beginning in 1978, in the professional paper series "Geological Survey Research." A pamphlet entitled "List of Geological Survey Geologic and Water-Supply Reports and Maps for Illinois," which includes reports on the geology of Illinois and other water-resources reports, is available free upon request to U.S. Geological Survey, Books and Open-File Reports, Federal Center, Bldg. 41, Box 25425, Denver, CO 80225.

Water-Resources Information

A monthly summary of the national water situation is presented in "National Water Conditions." It is available free on request to the Hydrologic Information Unit, U.S. Geological Survey, 419 National Center, Reston, VA 22092.

Records of streamflow, ground-water levels, and quality of water were published for many years as Geological Survey water-supply papers as explained below.

Streamflow Records

Records of daily flows of streams prior to 1971 were published in reports from the water-supply paper series "Surface-Water Supply of the United States," which were released in numbered parts as determined by natural drainage basins. Until 1961 this was an annual series; monthly and yearly summaries of these data were compiled in two reports: "Compilation of Records of Surface Waters of the United States through September 1950" and "Compilation of Records of

Surface Waters of the United States, October 1950 to September 1960." For the period 1961-70, 5-year compilations were published. Data for Illinois are published in Parts 3, 4, and 5.

Beginning with the 1971 water year, these series were replaced by a new publication series "U.S. Geological Survey Water-Data Reports." This series combines under one cover streamflow data, water-quality data for surface and ground water, and ground-water level data for each State. For Illinois, the title is "Water Resources Data for Illinois - Water Year 19XX: U.S. Geological Survey Water-Data Report IL-XX-1 and IL-XX-2" (XX represents water year published).

Quality-of-Water Records

Data on quality of surface water prior to 1971 were published annually in the Water-Supply Paper series "Quality of Surface Waters of the United States," which also was released in numbered parts as determined by natural drainage basins. Data for Illinois are in Parts 3, 4, and 5.

Ground-Water Records

Ground-water levels and artesian pressures in observation wells prior to 1975 were reported by geographic areas in a 5-year Water-Supply Paper series. Data for Illinois are in "Ground-Water Levels in the United States, North-Central States."

Flood Information

Methods for estimating the magnitude and frequency of floods for streams in Illinois are given in the Water-Resources Investigations 77-117, "Techniques for estimating magnitude and frequency of floods in Illinois" by G. W. Curtis, 1977.

The U.S. Geological Survey also outlines flood-prone areas on topographic maps as part of a nationwide Federal program for managing flood losses. Information on these maps is available from the District Chief, Water Resources Division, Urbana, Illinois.

Professional Papers

Professional papers are sold by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Building 41, Box 25425, Denver, CO 80225.

P 218 Geology and mineral resources of the Hardin and Brussels quadrangles (in Illinois), by W. W. Rubey. 1952.

P 448-H Low-flow characteristics of streams in the Mississippi embayment in Tennessee, Kentucky, and Illinois, by P. R. Speer, W. J. Perry, J. A. McCabe, O. G. Lara, and others, with a section on Quality of the water by H. G. Jeffery. 1965.

P 492 Thermal springs of the United States and other countries of the world--A summary, by G. A. Waring. 1965.

P 813-A Summary appraisals of the Nation's ground-water resources--Ohio Region, by R. M. Bloyd, Jr. 1974.

P 813-B Summary appraisals of the Nation's ground-water resources--Upper Mississippi Region, by R. M. Bloyd, Jr. 1975.

P 813-J Summary appraisals of the Nation's ground-water resources--Great Lakes Region, by W. G. Weist, Jr. 1977.

P 1100 Geological Survey Research, 1978, by the U.S. Geological Survey. 1978.

Water-Supply Papers

Water-Supply Papers are sold at the above-listed Denver, Co., address.

W 334 The Ohio Valley flood of March-April 1913, including comparisons with some earlier floods, by A. H. Horton and H. J. Jackson. 1913.

W 838 Floods of Ohio and Mississippi Rivers, January-February 1937, by N. C. Grover; with a section on flood deposits of the Ohio River, January-February 1937, by G. R. Mansfield. 1938.

W 1260-C Floods of 1952 in the basins of the Upper Mississippi River and Red River of the North. 1955.

W 1299 The industrial utility of public water supplies in the United States, 1952--Part 1, States east of the Mississippi River, by E. E. Lohr and S. K. Love. 1954.

W 1370-B Floods of October 1954 in the Chicago area, Illinois and Indiana, by W. S. Daniels and M. D. Hale. 1958.

W 1473 Study and interpretation of the chemical characteristics of natural water, 2d edition, by J. D. Hem. 1970.

W 1669-O Ground-water conditions at Argonne National Laboratory, Illinois, 1948-60, by D. B. Kowles, W. J. Drescher, and E. F. LeRoux. 1963.

W 1669-S Yearly variations in runoff for the conterminous United States, 1931-60, by M. W. Busby. 1963.

W 1797 Has the United States enough water?, by A. M. Piper. 1965.

W 1800 The role of ground water in the national water situation, by C. L. McGuinness. 1963.

W 1812 Public water supplies of the 100 largest cities in the United States, 1962, by C. N. Durfor and Edith Becker. 1964.

W 1838 Reservoirs in the United States, by R. O. R. Martin and R. L. Hanson. 1966.

W 1871 Water data for metropolitan areas in the United States--A summary of data from 222 areas compiled by W. J. Schneider. 1968.

W 1899-I Streamflow from the United States into the Atlantic Ocean during 1931-60, by C. D. Bue. 1970.

W 1990 Annotated bibliography on artificial recharge of ground water, 1955-67, by D. C. Signor, D. J. Growitz, and William Kam. 1970.

W 2002 Water in urban planning, Salt Creek basin, Illinois, by A. M. Spieker. 1970.

W 2005 Model hydrographs, by W. D. Mitchell. 1972.

W 2020 Subsurface waste disposal by means of wells--A selective annotated bibliography, by D. R. Rima, E. B. Chase, and B. M. Myers. 1971.

W 2078 Some chemical characteristics of mine drainage in Illinois, by L. G. Toler. 1982.

W 2226 Low-level radioactive-waste burial at the Palos Forest Preserve, Illinois: Geology and hydrology of the glacial drift, as related to the migration of tritium, by J. C. Olimpio. 1984.

W 2250 National Water Summary 1983--Hydrologic events and issues, by U.S. Geological Survey. 1984.

W 2262 A system for measuring surface runoff and collecting sediment samples from small areas, by J. R. Gray and M. P. deVries, in Meyer, E. L., ed., Selected papers in the hydrologic sciences. 1984.

W 2269 Traveltime and longitudinal dispersion in Illinois streams, by Julia B. Graf. 1986.

W 2275 National Water Summary 1984--Hydrologic events, selected water-quality trends, and ground-water resources, by U.S. Geological Survey. 1985.

W 2300 National Water Summary 1985--Hydrologic events and surface-water resources, by U.S. Geological Survey. 1986.

Circulars

Single copies of circulars still in print are available free from the above-listed Denver, Co., address.

C 216 Water resources of the St. Louis area, Missouri and Illinois, by J. R. Searcy, R. C. Baker, and W. H. Durum. 1952.

C 456 Estimated use of water in the United States, 1960, by K. A. MacKichan and J. C. Kammerer. 1961.

C 476 Principal lakes of the United States, by C. D. Bue. 1963.

C 536 Are we running out of water?, by R. L. Nace. 1967.

C 554 Hydrology for urban land planning--A guidebook on the hydrologic effects of urban land use, by L. B. Leopold. 1968.

C 556 Estimated use of water in the United States, 1965, by C. R. Murray. 1968.

C 601-A Water for the cities--The outlook, by W. J. Schneider and A. M. Spieker. 1969.

C 601-C Flood hazard mapping in metropolitan Chicago, by J. R. Sheaffer, D. W. Ellis, and A. M. Spieker. 1970.

C 601-D Water as an urban resource and nuisance, by H. E. Thomas and W. J. Schneider. 1970.

C 601-E Sediment problems in urban areas, by H. P. Guy. 1970.

C 601-F Hydrologic implications of solid-waste disposal by W. J. Schneider. 1970.

C 601-G Real-estate lakes, by D. A. Rickert and A. M. Spieker. 1972.

C 601-H Role of water in urban planning and management, by W. J. Schneider, D. A. Rickert, and A. M. Spieker. 1973.

C 601-I Water facts for planners and managers, by J. H. Feth. 1973.

C 601-J Extent and development of urban flood plains, by W. J. Schneider and J. E. Goddard. 1974.

C 601-K An introduction to the processes, problems, and management of urban lakes, by L. J. Britton, R. C. Averett, and R. F. Ferreira. 1975.

C 631 Disposal of liquid wastes by injection underground--Neither myth nor millennium, by A. M. Piper. 1969.

C 643 Reconnaissance of selected minor elements in surface waters of the United States, October 1970, by W. H. Durum, J. D. Hem, and S. G. Heidel. 1971.

C 645 A procedure for evaluating environmental impact, by L. B. Leopold, F. E. Clarke, B. B. Hanshaw, and J. R. Balsley. 1971.

C 676 Estimated use of water in the United States in 1970, by C. R. Murray and E. B. Reeves. 1972.

C 703 Water demands for expanding energy development, by G. H. Davis and L. A. Wood. 1974.

C 719 The National Stream Quality Accounting Network (NASQAN)--Some questions and answers, by J. F. Ficke and R. O. Hawkinson. 1975.

C 765 Estimated use of waters in the United States in 1975, by C. R. Murray and E. B. Reeves. 1977.

Hydrologic Investigations Atlases

Hydrologic Investigations Atlases and other maps are sold by the U.S. Geological Survey, Map Distribution, Federal Center, Bldg. 41, Box 25286, Denver, CO 80225.

HA-39. Floods in the Little Calumet River basin, near Chicago Heights, [northeastern] Illinois. 1960.

HA-61. Stream composition of the conterminous United States, by F. H. Rainwater. 1962.

HA-67. Floods in Arlington Heights quadrangle, [northeastern] Illinois, by D. W. Ellis, H. E. Allen, and A. W. Noehre. 1963.

HA-68. Floods in Elmhurst quadrangle, [northeastern] Illinois, by D. W. Ellis, H. E. Allen, and A. W. Noehre. 1963.

HA-69. Floods in Highland Park quadrangle, [northeastern] Illinois, by D. W. Ellis, H. E. Allen, and A. W. Noehre. 1963.

HA-70. Floods in Aurora North quadrangle, [northeastern] Illinois, by D. W. Ellis, H. E. Allen, and A. W. Noehre. 1963.

HA-71. Floods in Wheeling quadrangle, [northeastern] Illinois, by D. W. Ellis, H. E. Allen, and A. W. Noehre. 1963.

HA-85. Floods in Park Ridge quadrangle, [northeastern] Illinois, by D. W. Ellis, H. E. Allen, and A. W. Noehre. 1963.

HA-86. Floods in Hinsdale quadrangle, [northeastern] Illinois, by D. W. Ellis, H. E. Allen, and A. W. Noehre. 1964.

HA-87. Floods in Palatine quadrangle, [northeastern] Illinois, by H. E. Allen, D. W. Ellis, and D. E. Long. 1964.

HA-88. Floods in Libertyville quadrangle, [northeastern] Illinois, by A. W. Noehre, D. W. Ellis, and D. E. Long. 1964.

HA-89. Floods in Joliet quadrangle, [northeastern] Illinois, by H. E. Allen and T. A. Wyerman. 1964.

HA-90. Floods in Harvey quadrangle, [northeastern] Illinois, by H. E. Allen and V. J. May. 1964.

HA-142. Floods in Geneva quadrangle, [northeastern] Illinois, by A. W. Noehre and G. L. Walter. 1965.

HA-143. Floods in Lombard quadrangle, [northeastern] Illinois, by H. E. Allen and V. J. May. 1964.

HA-144. Floods in Wadsworth quadrangle, [northeastern] Illinois--Wisconsin, by A. W. Noehre. 1964.

HA-145. Floods in Palos Park quadrangle, northeastern Illinois, by A. W. Noehre and R. T. Mycyk. 1966.

HA-146. Floods in Romeoville quadrangle, [northeastern] Illinois, by A. W. Noehre and G. L. Walter. 1965.

HA-147. Floods in Elgin quadrangle, [northeastern] Illinois, by V. J. May and H. E. Allen. 1965.

HA-148. Floods in Wheaton quadrangle, northeastern Illinois, by V. J. May and H. E. Allen. 1965.

HA-149. Floods in Sag Bridge quadrangle, northeastern Illinois, by A. W. Noehre and G. L. Walter. 1966.

HA-150. Floods in Barrington quadrangle, [northeastern] Illinois, by A. W. Noehre, G. L. Walter, and H. E. Allen. 1965.

HA-151. Floods in Fox Lake quadrangle, northeastern Illinois, by A. W. Noehre, V. J. May, and G. L. Walter. 1965.

HA-152. Floods in Tinley Park quadrangle, northeastern Illinois, by H. E. Allen. 1965.

HA-153. Floods in Blue Island quadrangle, northeastern Illinois, by H. E. Allen. 1966.

HA-154. Floods in Naperville quadrangle, [northeastern] Illinois, by H. E. Allen and V. J. May. 1965.

HA-194. Generalized map showing annual runoff and productive aquifers in the conterminous United States, compiled by C. L. McGuinness. 1964.

HA-199. Preliminary map of the conterminous United States showing depth to and quality of shallowest ground water containing more than 1,000 parts per million dissolved solids, by J. H. Feth and others. 1965.

HA-200. Chemical quality of public water supplies of the United States and Puerto Rico, 1962, by C. N. Durfor and Edith Becker. 1964.

HA-202. Floods in West Chicago quadrangle, northeastern Illinois, by H. E. Allen and V. J. May. 1965.

HA-203. Floods in Streamwood quadrangle, northeastern Illinois, by V. J. May and H. E. Allen. 1965.

HA-204. Floods in Mokena quadrangle, northeastern Illinois, by A. W. Noehre. 1965.

HA-205. Floods in Lake Calumet quadrangle, northeastern Illinois, by H. E. Allen. 1966.

HA-206. Floods in River Forest quadrangle, northeastern Illinois, by V. J. May. 1966.

HA-207. Floods in Wauconda quadrangle, northeastern Illinois, by H. E. Allen. 1966.

HA-208. Floods in Lake Zurich quadrangle, northeastern Illinois, by A. W. Noehre and R. T. Mycyk. 1966.

HA-209. Floods in Steger quadrangle, northeastern Illinois, by H. E. Allen. 1966.

HA-210. Floods in Normantown quadrangle, northeastern Illinois, by V. J. May. 1966.

HA-211. Floods in Manhattan quadrangle, northeastern Illinois, by H. E. Allen and R. T. Mycyk. 1966.

HA-212. Annual runoff in the conterminous United States, by M. W. Busby. 1966.

HA-226. Floods in Antioch quadrangle, northeastern Illinois, by A. W. Noehre and G. L. Walter. 1966.

HA-227. Floods in Sugar Grove quadrangle, northeastern Illinois, by H. E. Allen. 1966.

HA-228. Floods in Plainfield quadrangle, northeastern Illinois, by V. J. May and R. J. Schafish. 1966.

HA-229. Floods in Elburn quadrangle, northeastern Illinois, by H. E. Allen. 1966.

HA-230. Floods in Grayslake quadrangle, northeastern Illinois, by V. J. May, A. W. Noehre, and G. L. Walter. 1967.

HA-231. Floods in Frankfort quadrangle, northeastern Illinois, by R. T. Mycyk. 1967.

HA-232. Floods in Pingree Grove quadrangle, northeastern Illinois, by H. E. Allen. 1967.

HA-233. Floods in Zion quadrangle, northeastern Illinois, by V. J. May and R. T. Mycyk. 1967.

HA-234. Floods in Waukegan quadrangle, northeastern Illiois, by R. T. Mycyk and V. J. May. 1967.

HA-235. Temperature of surface waters in the conterminous United States, by J. F. Blakey. 1966.

HA-251. Floods in Peotone quadrangle, northeastern Illinois, by H. E. Allen. 1967.

HA-252. Floods in Berwyn quadrangle, northeastern Illinois, by A. W. Noehre and G. L. Walter. 1967.

HA-253. Floods in Crystal Lake quadrangle, northeastern Illinois, by V. J. May and R. T. Mycyk. 1967.

HA-254. Floods in Elwood quadrangle, northeastern Illinois, by H. E. Allen and R. T. Mycyk. 1967.

HA-255. Floods in McHenry quadrangle, northeastern Illinois, by R. T. Mycyk and G. L. Walter. 1968.

HA-256. Floods in Woodstock quadrangle, northeastern Illinois, by H. E. Allen. 1968.

HA-257. Floods in Beecher West quadrangle, northeastern Illinois, by H. E. Allen. 1968.

HA-282. River discharge to the sea from the shores of the conterminous United States--A contribution to the International Hydrological Decade, compiled by Alfonso Wilson and K. T. Iseri. 1967.

HA-301. Floods in Dyer quadrangle, northeastern Illinois, by H. E. Allen. 1968.

HA-302. Floods in Beecher East quadrangle, northeastern Illinois, by H. E. Allen and A. W. Noehre. 1969.

HA-303. Floods in Richmond quadrangle, northeastern Illinois, by R. T. Mycyk and G. L. Walter. 1969.

HA-304. Floods in Wilton Center quadrangle, northeastern Illinois, by H. E. Allen and A. W. Noehre. 1969.

HA-305. Floods in Symerton quadrangle, northeastern Illinois, by H. E. Allen, A. W. Noehre, and L. D. Hauth. 1970.

HA-306. Floods in Wilmington quadrangle, northeastern Illinois, by H. E. Allen and A. W. Noehre. 1971.

HA-361. Floods in Huntley quadrangle, northeastern Illinois, by G. L. Walter and R. T. Mycyk. 1971.

HA-362. Floods in Channahon quadrangle, northeastern Illinois, by H. E. Allen and A. W. Noehre, 1971.

HA-363. Floods in Hebron quadrangle, northeastern Illinois, by H. E. Allen and R. S. Grant. 1971.

HA-449. Floods on Loop Creek and Richland Creek, near Belleville, [southwestern] Illinois, by J. D. Camp. 1972.

HA-458. Floods in Maple Park quadrangle, northeastern Illinois, by R. T. Mycyk and G. L. Walter. 1972.

HA-459. Floods in Hampshire quadrangle, northeastern Illinois, by R. T. Mycyk and M. D. Duerk. 1972.

HA-463. Floods in Marengo South quadrangle, northeastern Illinois, by H. E. Allen. 1972.

HA-464. Floods in Riley quadrangle, northeastern Illinois, by R. T. Mycyk and R. S. Grant. 1972.

HA-472. Floods in Big Rock quadrangle, northeastern Illinois, by R. T. Mycyk G. L. Walter, and B. L. McDonald. 1973.

HA-495. Floods in Marengo North quadrangle, northeastern Illinois, by H. E. Allen and A. W. Noehre. 1973.

HA-496. Floods in Harvard quadrangle, northeastern Illinois, by H. E. Allen and A. W. Noehre. 1973.

HA-497. Floods in Garden Prairie quadrangle, northeastern Illinois, by R. T. Mycyk and R. S. Grant. 1973.

HA-498. Floods in Capron quadrangle, northeastern Illinois, by R. S. Grant and M. D. Duerk. 1973.

Hydrologic-Unit Maps

Hydrologic unit maps and other maps are sold by the U.S. Geological Survey, Map Distribution, Federal Center, Bldg. 41, Box 25286, Denver, CO 80225.

U.S. Geological Survey, 1975, Hydrologic unit map of Illinois--1974.

Water-Resources Investigations Reports (WRI/NTIS)

The following reports are available for inspection at the Illinois and Reston, Va., offices of the U.S. Geological Survey. The reports may be purchased either as microfiche or hard copy from the National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161; the NTIS ordering number is given in parentheses at the end of the citation. Further information about these reports may be obtained from the District Chief, WRD, Urbana.

WRI 13-75. Drainage areas for Illinois streams, by K. M. Ogata, 1975. (PB 246298/AS)

WRI 77-104. Frequency analysis of Illinois floods using observed and synthetic streamflow records, by G. W. Curtis, 1977. (PB 277350/AS)

WRI 77-117. Technique for estimating magnitude and frequency of floods in Illinois, by G. W. Curtis, 1977. (PB 277255/AS)

WRI 78-22. Chemical analyses of surface water in Illinois, 1958-74, Volume I, Des Plaines River basin and Lake Michigan, by R. W. Healy and L. G. Toler, 1978. (PB 282674/AS)

WRI 78-23. Chemical analyses of surface water in Illinois, 1958-74, Volume II, Illinois River basin and Mississippi River tributaries north of Illinois River basin, by R. W. Healy and L. G. Toler, 1978. (PB 282675/AS)

WRI 78-24. Chemical analyses of surface water in Illinois, 1958-74, Volume III, Ohio River tributaries and Mississippi River tributaries south of Illinois River basin, by R. W. Healy and L. G. Toler, 1978. (PB 282676/AS)

WRI 78-22,23,24. 3-volume set (PB 282673/AS)

WRI 78-78. Water quality in the Sugar Creek basin, Bloomington and Normal, Illinois, by B. J. Prugh, Jr., 1978. (PB 288359/AS)

WRI 79-23. Chemical analyses of surface water in Illinois, 1975-77, Volume I, Des Plaines River basin and Lake Michigan, by David Grason and R. W. Healy, 1979. (PB 299912/AS)

WRI 79-24. Chemical analyses of surface water in Illinois, 1975-77, Volume II, Illinois River basin and Mississippi River tributaries north of Illinois River basin, by David Grason and R. W. Healy, 1979. (PB 299913/AS)

WRI 79-25. Chemical analyses of surface water in Illinois, 1975-77, Volume III, Ohio River tributaries and Mississippi River tributaries south of Illinois River basin, by David Grason and R. W. Healy, 1979. (PB 299914/AS)

WRI 79-23,24,25. 3-volume set (PB 299911/AS)

WRI 79-36. Effects of urbanization on the magnitude and frequency of floods in northeastern Illinois, by H. E. Allen, Jr. and R. M. Bejcek, 1979. (PB 299065/AS)

WRI 79-110. River mileages and drainage areas for Illinois streams - Volume 1, Illinois except Illinois River basin, by R. W. Healy, 1979. (AD A082472)

WRI 79-111. River mileages and drainage areas for Illinois streams - Volume 2, Illinois River basin, by R. W. Healy, 1979. (AD A082473)

WRI 82-13. Time of concentration and storage coefficient values for Illinois streams, by J. B. Graf, George Garklavs, and K. A. Oberg, 1982. (PB82 219320)

WRI 82-16. Hydrologic characteristics of surface-mined land reclaimed by sludge irrigation, Fulton County, Illinois, by G. L. Patterson, R. F. Fuentes, and L. G. Toler, 1982. (PB83 124982)

WRI 82-22. A technique for estimating time of concentration and storage coefficient values for Illinois streams, by J. B. Graf, George Garklavs, and K. A. Oberg, 1982. (PB82 218793)

Water-Resources Investigations Reports
(Books and Open-File Reports Section)

The following reports are available for inspection in the Urbana, Ill., and Reston, Va., offices of the U.S. Geological Survey. They may be purchased from the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Bldg. 41, Box 25425, Denver, CO 80225.

82-4047. Hydrologic effects of storing liquified sewage sludge on strip-mine land, Fulton County, Illinois, by G. L. Patterson, 1982.

82-4073. Runoff, sediment transport, and water quality in a northern Illinois agricultural watershed before urban development, 1979-81, by H. E. Allen, Jr. and J. R. Gray, 1984.

83-4048. Water in sand and gravel deposits in McHenry County, Illinois, by J. R. Nicholas and J. T. Krohelski, 1984.

83-4125. Hydrogeology of a low-level radioactive-waste disposal site near Sheffield, Illinois, by J. B. Foster, J. R. Erickson, and R. W. Healy, 1984.

83-4136. Measurement of bedload discharge in nine Illinois streams with the Helley-Smith sampler, by J. B. Graf, 1983.

83-4265. Runoff and water-quality characteristics of surface-mined lands in Illinois, by T. P. Brabets, 1984.

84-4003. Estimates of long-term suspended-sediment loads in Bay Creek at Nebo, Pike County, Illinois, 1940-80, by T. R. Lazaro, K. K. Fitzgerald, and L. R. Frost, Jr., 1984.

84-4037. Evaluation of a hydrograph-shifting method for estimating suspended-sediment loads in Illinois streams, by L. R. Frost, Jr. and L. J. Mansue, 1984.

84-4123. Cost effectiveness of the U.S. Geological Survey's stream gaging program in Illinois, by D. M. Mades and K. A. Oberg, 1984.

84-4180. Quality of water in the alluvial aquifer, American Bottoms, East St. Louis, Illinois, by D. C. Voelker, 1984.

84-4183. Hydrogeologic setting east of a low-level radioactive-waste disposal site near Sheffield, Illinois, by J. B. Foster, George Garklavs, and G. W. Mackey, 1984.

84-4256. Hydrology of a surface coal mined area in Randolph County, Illinois, by J. V. Borghese and A. R. Klinger, 1984.

84-4311. Low-flow characteristics of streams in the Kishwaukee River Basin, Illinois, by H. E. Allen, Jr. and E. A. Cowan, 1985.

84-4355. A gazetteer of surface-mine lakes, Eastern Interior Coal Province, Illinois, by D. C. Voelker, 1985.

85-4228. Concepts and data-collection techniques used in a study of the unsaturated zone at a low-level radioactive-waste disposal site near Sheffield, Illinois, by R. W. Healy, M. P. deVries, and R. G. Striegl, 1986.

85-4344. Assessment of low-flow water quality in the Du Page River, Illinois, by W. O. Freeman, A. R. Schmidt, and J. K. Stamer, 1986.

86-4072. Evaluation of the U.S. Geological Survey's gaging-station network in Illinois, by D. M. Mades and K. A. Oberg, 1986.

86-4112. Channel-storage/discharge relations for the Peoria and La Grange Dams on the Illinois River in Illinois, by George Garklavs, A. R. Klinger, and D. M. Mades, 1986.

86-4153. Hydrogeology, ground-water flow, and tritium movement at a low-level radioactive-waste disposal site near Sheffield, Illinois, by George Garklavs and R. W. Healy, 1986.

86-4156. Technique for predicting ground-water discharge to surface coal mines and resulting changes in head, by L. S. Weiss, D. L. Galloway, and A. L. Ishii, 1986.

86-4323. Assessment of low-flow water quality in Richland Creek, Illinois, by W. O. Freeman and A. R. Schmidt, 1986.

Open-File Reports
(Books and Open-File Reports Section)

The following reports are available for inspection in the Urbana, Ill., and Reston, Va., offices of the U.S. Geological Survey. They may be purchased from U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Building 41, Box 25425, Denver, CO 80225.

77-867. Sediment transport to the Fox Chain of Lakes, Illinois, by T. P. Brabets, 1977.

79-210. Water-table contour map of land reclamation site, Fulton County, Illinois, by R. F. Fuentes and G. L. Patterson, 1979.

79-1545. Preliminary report on the hydrogeology of a low-level radioactive-waste disposal site near Sheffield, Illinois, by J. B. Foster and J. R. Erickson, 1980.

80-775. Low-level radioactive-waste burial at the Palos Forest Preserve, Illinois, Part 1. Preliminary finite-difference models of steady state ground-water flow, by J. C. Olimpio, 1980.

81-1009. Stage-discharge relations at dams on the Illinois and Des Plaines Rivers in Illinois, by D. M. Mades, 1981.

82-645. Determination of ultimate carbonaceous BOD and the specific rate constant (K_1), by J. K. Stamer, J. P. Bennett, and S. W. McKenzie, 1983.

82-692. Data for wells at the low-level radioactive-waste burial site in the Palos Forest Preserve, Illinois, by J. C. Olimpio, 1982.

82-693. Work Plan for the Sangamon River basin, Illinois, by J. K. Stamer and D. M. Mades, 1983.

82-1001. Proceedings--Illinois Water-Data-Users Meeting, Peoria, Illinois, February 23-24, 1982, by L. G. Toler, 1982.

83-213. Floods of December 1982 and January 1983 in central and southern Mississippi River basin, by V. B. Sauer and J. M. Fulford, 1983.

83-926. Geologic and hydrologic data collected during 1976-1984 at the Sheffield low-level radioactive-waste disposal site and adjacent areas, Sheffield, Illinois, by J. B. Foster, George Garklavs, and G. W. Mackey, 1984.

84-584. Illinois ground-water observation network - A preliminary planning document, by L. R. Frost, Jr., Michael O'Hearn, J. P. Gibb, and M. G. Sherrill, 1984.

84-603. Effects of urban runoff on Lake Ellyn at Glen Ellyn, Illinois, by R. G. Striegl, 1985.

84-856. Measurement of ground water velocity using Rhodamine WT dye near Sheffield, Illinois, by George Garklavs and L. G. Toler, 1985.

85-98. Measurement of bedload discharge in nine Illinois streams with the Helley-Smith sampler, by J. B. Graf, in Proceedings of the Advanced Seminar on Sedimentation, August 15-19, 1983, Denver, Colorado, p. 67-68.

85-98. Erosion and landform modification at a low-level radioactive-waste disposal facility near Sheffield, Illinois, by J. R. Gray, in Proceedings of the Advanced Seminar on Sedimentation, August 15-19, 1983, Denver, Colorado, p. 37-39.

85-629. Sources of climatologic, hydrologic, and hydraulic information in the Illinois River basin, Illinois, Indiana, and Wisconsin, by G. W. Curtis, 1986.

86-130. Water resources activities in Illinois, 1985, by M. L. Garrelts, 1986.

86-416(W). Observation-well network in Illinois, 1984, by D. C. Voelker, 1986.

Water-Resources Investigations/Open-File Reports

The following reports are available from the District Office, 4th Floor, 102 East Main Street, Urbana, IL 61801:

76-87. Index to water-resources data for Illinois, by D. E. Winget, 1976.

81-403. Hydrology of Area 35, Eastern Region, Interior Coal Province, Illinois and Kentucky, by E. E. Zuehls, G. L. Ryan, D. B. Peart, and K. K. Fitzgerald, 1981.

81-636. Hydrology of Area 25, Eastern Region, Interior Coal Province, Illinois, by E. E. Zuehls, G. L. Ryan, D. B. Peart, and K. K. Fitzgerald, 1981.

82-858. Hydrology of Area 29, Eastern Region, Interior Coal Province, Illinois, by K. K. Fitzgerald, C. A. Peters, and E. E. Zuehls, 1983.

82-1005. Hydrology of Area 30, Eastern Region, Interior Coal Province, Illinois and Indiana, by D. J. Wangsness and others, 1983.

83-544. Hydrology of Area 28, Eastern Region, Interior Coal Province, Illinois, by E. E. Zuehls, K. K. Fitzgerald, and C. A. Peters, 1984.

The following reports are available for inspection only in the Urbana, Ill., office of the U.S. Geological Survey. Further information about these reports may be obtained from the District Chief, WRD, 4th Floor, 102 East Main Street, Urbana, IL 61801.

Carns, J. M., 1973, Magnitude and frequency of floods in Illinois.

Curtis, G. W., 1969, Statistical summaries of Illinois streamflow data.

Kirk, J. R., and others, 1979, Water withdrawals in Illinois, 1978.

----- 1982, Water withdrawals in Illinois, 1980.

----- 1984, Water withdrawals in Illinois, 1982.

----- 1985, Water withdrawals in Illinois, 1984.

Kirk, J. R., and Sanderson, E. W., 1982, Illinois water inventory program.

Lara, O. G., 1970, Low-flow frequencies of Illinois streams.

Mitchell, W. D., 1948, Unit hydrographs in Illinois.

----- 1950, Water-supply characteristics of Illinois streams.

----- 1954, Floods in Illinois--Magnitude and frequency.

----- 1957, Flow duration of Illinois streams.

Prugh, B. J., Jr., 1976, Depth and frequency of floods in Illinois.

Sieber, C. R., 1970, A proposed streamflow-data program for Illinois.

Water-Data Reports

The water-data reports listed below may be purchased as hard copy or microfiche from the National Technical Information Service (NTIS), U.S. Department of Commerce, Springfield, VA 22161. They are available for inspection only at the Illinois and Reston, Va., offices of the U.S. Geological Survey. The PB number in parentheses is the NTIS ordering number.

IL-71-1. Water Resources Data for Illinois--Water Year 1971, by U.S. Geological Survey, 1972. (PB 288019/AS)

IL-72-1. Water Resources Data for Illinois--Water Year 1972, by U.S. Geological Survey, 1973. (PB 288018/AS)

IL-73-1. Water Resources Data for Illinois--Water Year 1973, by U.S. Geological Survey, 1974. (PB 288020/AS)

IL-74-1. Water Resources Data for Illinois--Water Year 1974, by U.S. Geological Survey, 1975. (PB 288021/AS)

IL-75-1. Water Resources Data for Illinois--Water Year 1975, by U.S. Geological Survey, 1976. (PB 254434/AS)

IL-76-1. Water Resources Data for Illinois--Water Year 1976, by U.S. Geological Survey, 1977. (PB 266379/AS)

IL-77-1. Water Resources Data for Illinois--Water Year 1977, by U.S. Geological Survey, 1978. (PB 283562/AS)

IL-78-1. Water Resources Data for Illinois--Water Year 1978, Volume 1, Illinois except Illinois River basin, by U.S. Geological Survey, 1979. (PB 296416/AS)

IL-78-2. Water Resources Data for Illinois--Water Year 1978, Volume 2, Illinois River basin, by U.S. Geological Survey, 1979. (PB 296417/AS)

IL-79-1. Water Resources Data for Illinois--Water Year 1979, Volume 1, Illinois except Illinois River basin, by U.S. Geological Survey, 1980. (PB80-207004)

IL-79-2. Water Resources Data for Illinois--Water Year 1979, Volume 2, Illinois River basin, by U.S. Geological Survey, 1980. (PB80-205230).

IL-80-1. Water Resources Data for Illinois--Water Year 1980, Volume 1, Illinois except Illinois River basin, by U.S. Geological Survey, 1981. (PB82-106311)

IL-80-2. Water Resources Data for Illinois--Water Year 1980, Volume 2, Illinois River basin, by U.S. Geological Survey, 1981. (PB82-106220)

IL-81-1. Water Resources Data - Illinois--Water Year 1981, Volume 1, Illinois except Illinois River basin, by U.S. Geological Survey, 1982. (PB83 119966)

IL-81-2. Water Resources Data - Illinois--Water Year 1981, Volume 2, Illinois River basin, by U.S. Geological Survey, 1982. (PB83 119974)

IL-82-1. Water Resources Data - Illinois--Water Year 1982, Volume 1, Illinois except Illinois River basin, by R. L. Stahl, K. K. Fitzgerald, T. E. Richards, and P. D. Hayes, 1983. (PB84-120112)

IL 82-2. Water Resources Data - Illinois--Water Year 1982, Volume 2, Illinois River basin, by T. E. Richards, P. D. Hayes, R. L. Stahl, and K. K. Fitzgerald, 1983. (PB84-120120)

IL 83-1. Water Resources Data - Illinois--Water Year 1983, Volume 1, Illinois except Illinois River basin, by R. L. Stahl, K. K. Fitzgerald, T. E. Richards, and P. D. Hayes, 1984. (PB85-125755)

IL 83-2. Water Resources Data - Illinois--Water Year 1983, Volume 2, Illinois River basin, by K. K. Fitzgerald, P. D. Hayes, T. E. Richards, and R. L. Stahl, 1984. (PB85-127363)

IL 84-1. Water Resources Data - Illinois--Water Year 1984, Volume 1, Illinois except Illinois River basin, by R. L. Stahl, K. K. Fitzgerald, T. E. Richards, and P. D. Hayes, 1985. (PB86-128568)

IL-84-2. Water Resources Data - Illinois--Water Year 1984, Volume 2, Illinois River basin, by K. K. Fitzgerald, P. D. Hayes, T. E. Richards, and R. L. Stahl, 1985. (PB86-135316)

IL-85-1. Water Resources Data - Illinois--Water Year 1985, Volume 1, Illinois except Illinois River basin, by R. L. Stahl, K. K. Fitzgerald, T. E. Richards, and P. D. Hayes, 1986. (PB87-105631)

IL-85-2. Water Resources Data - Illinois--Water Year 1985, Volume 2, Illinois River basin, by K. K. Fitzgerald, P. D. Hayes, T. E. Richards, and R. L. Stahl, 1986. (PB87-105649)

Miscellaneous Publications

Abstracts are condensed but informative summaries of presentations made at meetings of scientific and professional organizations. Typically they summarize the principal conclusions of an author's current work but contain little supporting data. These publications are not available from the U.S. Geological Survey.

Hydrogeology of a low-level radioactive-waste disposal site near Sheffield, Illinois, by J. R. Erickson, published in the program of the North-Central Section, Geological Society of America, 14th annual meeting, April 10-11, 1980, Bloomington, Indiana, p. 225.

Anisotropic ground-water movement and tritium migration in glacial drift beneath a low-level radioactive-waste burial site, Argonne, Illinois, by J. C. Olimpio, published in the program of the North-Central Section, Geological Society of America, 14th annual meeting, April 10-11, 1980, Bloomington, Indiana, p. 253.

Runoff characteristics from strip-mined lands in Illinois, by T. P. Brabets, published in the proceedings of the Midwest AGU meeting, September 18-19, 1980, De Kalb, Illinois, p. 12.

Estimating average velocities for selected reaches of Illinois streams, by J. B. Graf, published in EOS, Transactions, American Geophysical Union, Vol. 63, No. 18, May 4, 1982, p. 325.

Lessons learned in a hydrogeological case at Sheffield, Illinois, by J. B. Foster, in Proceedings of the Symposium on Low-Level Waste Disposal, Site Characterization and Monitoring, June 16-17, 1982, Arlington, Virginia, NUREG/CP-0028, CONF-820674, Vol. 2, p. 237-244.

Low-flow characteristics of streams in the Kishwaukee River basin, Illinois, 1982, by H. E. Allen, Jr. and E. A. Cowan, in Abstracts, Illinois Water Resources Conference, Illinois Water: Planning for the Future, April 7-8, 1983, De Kalb, Illinois.

Ground-water conditions at a low-level radioactive-waste disposal site near Sheffield, Illinois, by R. W. Healy and J. B. Foster, in Abstracts, Illinois Water Resources Conference, Illinois Water: Planning for the Future, April 7-8, 1983, De Kalb, Illinois.

Northern Midwest regional aquifer study in Illinois, by M. G. Sherrill, in Abstracts, Illinois Water Resources Conference, Illinois Water: Planning for the Future, April 7-8, 1983, De Kalb, Illinois.

Erosion and land modification studies at a low-level radioactive-waste disposal facility near Sheffield, Illinois, by J. R. Gray, in Abstracts, Illinois Water Resources Conference, Illinois Water: Planning for the Future, April 7-8, 1983, De Kalb, Illinois.

Water information systems of the U.S. Geological Survey, by A. W. Noehre, in Abstracts, Illinois Water Resources Conference, Illinois Water: Planning for the Future, April 7-8, 1983, De Kalb, Illinois.

Tritium migration at Palos Forest Preserve, Cook County, Illinois, by J. R. Nicholas, in Abstracts, Illinois Water Resources Conference, Illinois Water: Planning for the Future, April 7-8, 1983, De Kalb, Illinois.

Hydrogeologic controls on the extent and rate of tritium migration from a low-level radioactive-waste disposal facility near Sheffield, Illinois, by J. B. Foster, R. W. Healy, K. Cartwright, and T. M. Johnson, in Abstracts with Programs, 1983, 17th annual meeting, North-Central Section, The Geological Society of America, April 28-29, 1983, Madison, Wisconsin, Vol. 15, No. 4.

Preliminary results of a study of the unsaturated zone at the low-level radioactive-waste disposal site near Sheffield, Illinois, by R. W. Healy, in Proceedings of the Fifth Annual Participants' Information Meeting, DOE Low-Level Waste Management Program, August 30-September 1, 1983, Denver, Colorado, CONF-8308106, p. 669-673.

Accumulation of sediment and heavy metals in Lake Ellyn, an urban lake at Glen Ellyn, Illinois, by E. A. Cowan, in Proceedings of Urban Effects on Water Quality and Quantity, October 20-21, 1983, Urbana, Illinois, Illinois Department of Energy and Natural Resources Document No. 84/06, p. 280-292.

Effects of an urban lake on stormwater runoff and quality, by R. G. Striegl, in Proceedings of Urban Effects on Water Quality and Quantity, October 20-21, 1983, Urbana, Illinois, Illinois Department of Energy and Natural Resources Document No. 84/06, p. 74-83.

Study of the unsaturated zone at a low-level radioactive-waste disposal site, by R. W. Healy, C. A. Peters, M. P. deVries, P. C. Mills, and D. L. Moffett, in Proceedings of the Characterization and Monitoring of the Vadose (Unsaturated) Zone, National Water Well Association, December 8-10, 1983, Las Vegas, Nevada, p. 820-830.

Infiltration through trench caps at a low-level radioactive-waste disposal site, by R. W. Healy, in Proceedings of the National Conference on Advances in Infiltration, December 12-13, 1983, Chicago, Illinois, American Society of Agricultural Engineers Publication 11-83, p. 376.

Predicting ground-water drainage to surface mines, by L. S. Weiss and D. L. Galloway, in Proceedings of Water for Resource Development, ASCE Hydraulics Division Specialty Conference, August 14-17, 1984, Coeur d' Alene, Idaho, p. 184-188.

Runoff, sediment transport, and landform modifications near Sheffield, Illinois, by J. R. Gray and M. P. deVries, in Sixth Annual DOE Low-Level Waste Management Program Participants' Information Meeting, September 11-13, 1984, Denver, Colorado, CONF-8409115-Absts., p. 67.

Runoff, sediment transport, and landform modifications near Sheffield, Illinois, by J. R. Gray, in Proceedings of the Sixth Annual Participants' Information Meeting, DOE Low-Level Waste Management Program, September 11-13, 1984, Denver, Colorado, CONF-8409115, p. 534-544.

Methods for determining the transport of radioactive gases in the unsaturated zone, by R. G. Striegl, in Sixth Annual DOE Low-Level Waste Management Program Participants' Information Meeting, September 11-13, 1984, Denver, Colorado, CONF-8409115-Absts., p. 70.

Methods for determining the transport of radioactive gases in the unsaturated zone, by R. G. Striegl, in Proceedings of the Sixth Annual Participants' Information Meeting, DOE Low-Level Waste Management Program, September 11-13, 1984, Denver, Colorado, CONF-8409115, p. 579-587.

Hydrogeologic factors governing tritium migration at a low-level radioactive-waste burial site near Chicago, Illinois, by J. R. Nicholas, in 29th Annual Midwest Groundwater Conference, October 1-3, 1984, Lawrence, Kansas.

Technique for estimating cumulative ground-water drainage to surface coal-mine excavations by L. S. Weiss, in 29th Annual Midwest Groundwater Conference, October 1-3, 1984, Lawrence Kansas.

Water chemistry in the unsaturated zone at a low-level radioactive-waste disposal site near Sheffield, Illinois, by C. A. Peters, in 29th Annual Midwest Groundwater Conference, October 1-3, 1984, Lawrence, Kansas.

Ground-water drainage to surface mines refined, by L. S. Weiss, in Hydraulics and Hydrology in the Small Computer Age, Volume 1, Proceedings of the Specialty Conference sponsored by the Hydraulics Division of the American Society of Civil Engineers, Aug. 12-17, 1985, Lake Buena Vista, Florida, p. 621-626.

Collapse and erosion at the low-level radioactive-waste disposal site near Sheffield, Illinois, by J. R. Gray and L. L. McGovern, in Seventh Annual DOE Low-Level Waste Management Program Participants' Information Meeting, September 10-13, 1985, Las Vegas, Nevada, CONF-8509121-Absts., p. 90.

Collapse and erosion at the low-level radioactive-waste burial site near Sheffield, Illinois, by J. R. Gray and L. L. McGovern, in Proceedings of the Seventh Annual Participants' Information Meeting, DOE Low-Level Waste Management Program, September 11-13, 1985, Las Vegas, Nevada, CONF-8509121, p. 737-753.

Variability in concentrations of gases in the unsaturated zone adjacent to a low-level radioactive-waste site near Sheffield, Illinois, by R. G. Striegl and P. M. Ruhl, in Seventh Annual DOE Low-Level Waste Management Program Participants' Information Meeting, September 10-13, 1985, Las Vegas, Nevada, CONF-8509121-Absts., p. 89.

Variability in the partial pressures of gases in the unsaturated zone adjacent to a low-level radioactive-waste disposal site near Sheffield, Illinois, by R. G. Striegl and P. M. Ruhl, in Proceedings of the Seventh Annual Participants' Information Meeting, DOE Low-Level Waste Management Program, September 11-13, 1985, Las Vegas, Nevada, CONF-8509121, p. 725-736.

Chemistry of pore water in the unsaturated zone at a low-level radioactive-waste disposal site near Sheffield, Illinois, by Charles A. Peters, in Proceedings of the NWWA Conference on Characterization and Monitoring of the Vadose (Unsaturated) Zone, November 19-21, 1985, Denver, Colorado, p. 272-282.

Runoff, sediment transport, and surface collapse at a low-level radioactive-waste burial site near Sheffield, Illinois, by J. R. Gray and C. A. Peters, in Proceedings of the 1985 Symposium on Surface Mining, Hydrology, Sedimentology, and Reclamation, December 9-13, 1985, Lexington, Kentucky, p. 389.

Landform modifications at a nuclear-waste burial site, by J. R. Gray, in Proceedings of the Fourth Federal Interagency Sedimentation Conference, Volume 1, March 1986, Las Vegas, Nevada, p. 3-93 to 3-102.

Rainfall-loss parameter estimation for Illinois, by L. S. Weiss and A. L. Ishii, in Proceedings of Water Forum '86: World Water Issues in Evolution, August 4-6, 1986, Long Beach, California, p. 682-689.

Illinois ground-water observation network, by D. C. Voelker and M. G. Sherrill, in Proceedings of the 31st Annual Midwest Ground Water Conference, October 27-29, 1986, Little Rock, Arkansas.

Lessons learned from research at a low-level radioctive-waste disposal site near Sheffield, Illinois, by B. J. Ryan and M. G. Sherrill, in Proceedings of the 31st Annual Midwest Ground Water Conference, October 27-29, 1986, Little Rock, Arkansas.

Theory and application of hydraulic testing in a fractured dolomite near Chicago, Illinois, by D. L. Moffett, J. R. Nicholas, and A. M. Shapiro, in Proceedings of the 31st Annaul Midwest Ground Water Conference, October 27-29, 1986, Little Rock, Arkansas.

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REFERENCES

Illinois Environmental Protection Agency, 1984, Illinois water quality report: State of Illinois, Environmental Protection Agency, Division of Water Pollution Control, Monitoring Unit, 171 p.

Illinois Pollution Control Board, 1984, Rules and regulations, Title 35: Environmental protection, Subtitle C: Water pollution, Chapter I: Springfield, 44 p.

Josefson, B. M., and Blackwell, C. D., 1982, Directory of assistance centers of the National Water Data Exchange (NAWDEX): U.S. Geological Survey Open-File Report 82-925, 31 p.

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TABLES 2 and 3

Table 2.--Surface-Water Stations

Abbreviations for types of data collected are:

- C - Crest stage - peak-stage and peak-discharge record only.
- CQ - Chemical quality.
- D - Discharge - continuous record of stage and discharge.
- DS - Discharge with auxiliary slope gage - continuous record of stage and discharge.
- R - Lake contents - furnished by U.S. Army Engineers, St. Louis District.
- S - Stage - continuous record of stage.
- S/8 - Stage at 0800 hours.
- SD - Suspended sediment.

Station No.	Station	Type of data
03336645	Middle Fork Vermilion River above Oakwood, Ill.	D,CQ
03336900	Salt Fork near St. Joseph, Ill.	D,CQ
03337000	Boneyard Creek at Urbana, Ill.	D
03337700	Saline Branch near Mayview, Ill.	CQ
03338097	Salt Fork near Oakwood, Ill.	CQ
03338780	North Fork Vermilion River near Bismarck, Ill.	CQ
03339000	Vermilion River near Danville, Ill.	D,CQ
03339147	Little Vermilion River near Georgetown, Ill.	CQ
03341414	Brouilletts Creek near St. Bernice, Ind.	CQ
03341540	Sugar Creek near Elbridge, Ill.	CQ
03341920	Wabash River at Hutsonville, Ill.	CQ
03342050	Sugar Creek at Palestine, Ill.	CQ
03343395	Embarras River at Camargo, Ill.	CQ
03343400	Embarras River near Camargo, Ill.	D
03344000	Embarras River near Diona, Ill.	C,CQ
03344500	Range Creek near Casey, Ill.	C
03345500	Embarras River at Ste. Marie, Ill.	D,CQ
03346000	North Fork Embarras River near Oblong, Ill.	D,CQ
03346550	Embarras River near Billett, Ill.	CQ
03378000	Bonpas Creek at Browns, Ill.	D,CQ
03378635	Little Wabash River near Effingham, Ill.	D,CQ
03378900	Little Wabash River at Louisville, Ill.	C,CQ
03379500	Little Wabash River below Clay City, Ill.	D,CQ
03379600	Little Wabash River at Blood, Ill.	CQ
03379950	Elm River near Toms Prairie, Ill.	CQ
03380350	Skillet Fork near Iuka, Ill.	CQ
03380475	Horse Creek near Keenes, Ill.	D
03380500	Skillet Fork at Wayne City, Ill.	D,CQ
03381400	Skillet Fork near Carmi, Ill.	CQ
03381495	Little Wabash River at Main Street at Carmi, Ill.	CQ

Table 2.--Surface-Water Stations--Continued

Station No.	Station	Type of data
03381500	Little Wabash River at Carmi, Ill.	DS
03382090	Sugar Creek near Stonefort, Ill.	CQ
03382100	South Fork Saline River near Carrier Mills, Ill.	D,CQ
03382185	Bankston Fork near Dorris Heights, Ill.	CQ
03382205	Middle Fork Saline River near Pankeyville, Ill.	CQ
03382325	North Fork Saline River near Texas City, Ill.	CQ
03382530	Saline River near Gibsonia, Ill.	CQ
03384450	Lusk Creek near Eddyville, Ill.	D,CQ
03385000	Hayes Creek at Glendale, Ill.	C
03612000	Cache River at Forman, Ill.	D,CQ
05414820	Sinsinawa River near Menominee, Ill.	D
05416000	Galena River at Galena, Ill.	CQ
05418950	Apple River near Elizabeth, Ill.	CQ
05419000	Apple River near Hanover, Ill.	D
05420100	Plum River at Savanna, Ill.	CQ
05435500	Pecatonica River at Freeport, Ill.	D,CQ
05435680	Yellow Creek near Freeport, Ill.	CQ
05435800	Pecatonica River at Harrison, Ill.	CQ
05437500	Rock River at Rockton, Ill.	D,CQ
05437695	Keith Creek at Eighth Street at Rockford, Ill.	D
05438201	Kishwaukee River at GP Rd at Garden Prairie, Ill.	CQ
05438250	Coon Creek at Riley, Ill.	C,CQ
05438500	Kishwaukee River at Belvidere, Ill.	D
05438600	Kishwaukee R above South Branch nr Perryville, Ill.	CQ
05439000	South Branch Kishwaukee River at De Kalb, Ill.	D
05439500	South Branch Kishwaukee River nr Fairdale, Ill.	D,CQ
05440000	Kishwaukee River near Perryville, Ill.	D,CQ
05440520	Killbuck Creek near New Milford, Ill.	CQ
05440700	Rock River at Byron, Ill.	CQ
05442020	Kyte River at Daysville, Ill.	CQ
05442200	Rock River at Grand Detour, Ill.	CQ
05443500	Rock River at Como, Ill.	D,CQ
05444000	Elkhorn Creek near Penrose, Ill.	D,CQ
05446000	Rock Creek at Morrison, Ill.	D
05446100	Rock Creek near Erie, Ill.	CQ
05446500	Rock River near Joslin, Ill.	D,CQ
05447100	Green River near Deer Grove, Ill.	CQ
05447500	Green River near Geneseo, Ill.	D,CQ
05448000	Mill Creek at Milan, Ill.	D
05466000	Edwards River near Orion, Ill.	D

Table 2.--Surface-Water Stations--Continued

Station No.	Station	Type of data
05466500	Edwards River near New Boston, Ill.	D,CQ
05467000	Pope Creek near Keithsburg, Ill.	D
05468500	Cedar Creek at Little York, Ill.	C
05469000	Henderson Creek near Oquawka, Ill.	D,CQ
05495500	Bear Creek near Marcelline, Ill.	D,CQ
05502020	Hadley Creek near Barry, Ill.	C
05502040	Hadley Creek at Kinderhook, Ill.	D
05512500	Bay Creek at Pittsfield, Ill.	D
05513000	Bay Creek at Nebo, Ill.	D,CQ
05520500	Kankakee River at Momence, Ill.	D,CQ
05525000	Iroquois River at Iroquois, Ill.	D,CQ
05525500	Sugar Creek at Milford, Ill.	D,CQ
05526000	Iroquois River near Chebanse, Ill.	D,CQ
05527500	Kankakee River near Wilmington, Ill.	D,CQ
05527800	Des Plaines River at Russell, Ill.	D,CQ
05528000	Des Plaines River near Gurnee, Ill.	D,CQ
05528500	Buffalo Creek near Wheeling, Ill.	D
05529000	Des Plaines River near Des Plaines, Ill.	D,CQ
05529500	McDonald Creek near Mount Prospect, Ill.	D
05530000	Weller Creek at Des Plaines, Ill.	D
05530590	Des Plaines River near Schiller Park, Ill.	CQ
05530990	Salt Creek at Rolling Meadows, Ill.	D
05531500	Salt Creek at Western Springs, Ill.	D,CQ
05532000	Addison Creek at Bellwood, Ill.	D,CQ
05532500	Des Plaines River at Riverside, Ill.	D
05533000	Flag Creek near Willow Springs, Ill.	D
05533400	Sawmill Creek near Lemont, Ill.	D
05534050	Des Plaines River at Lockport, Ill.	CQ
05534500	North Branch Chicago River at Deerfield, Ill.	D,CQ
05535000	Skokie River at Lake Forest, Ill.	D
05535070	Skokie River near Highland Park, Ill.	D
05535500	West Fork of N Br Chicago River at Northbrook, Ill.	D
05536000	North Branch Chicago River at Niles, Ill.	D,CQ,SD
05536195	Little Calumet River at Munster, Ind.	CQ
05536215	Thorn Creek at Glenwood, Ill.	D
05536235	Deer Creek near Chicago Heights, Ill.	D
05536255	Butterfield Creek at Flossmoor, Ill.	D
05536265	Lansing ditch near Lansing, Ill.	D
05536275	Thorn Creek at Thornton, Ill.	D,CQ
05536290	Little Calumet River at South Holland, Ill.	D

Table 2.--Surface-Water Stations--Continued

Station No.	Station	Type of data
05536340	Midlothian Creek at Oak Forest, Ill.	D
05536500	Tinley Creek near Palos Park, Ill.	D
05536700	Calumet Sag Channel at Sag Bridge, Ill.	CQ
05536995	Chicago Sanitary and Ship Canal at Romeoville, Ill.	D
05537000	Chicago Sanitary and Ship Canal at Lockport, Ill.	CQ
05537500	Long Run near Lemont, Ill.	D
05537980	Des Plaines River at Route 53 at Joliet, Ill.	CQ
05539000	Hickory Creek at Joliet, Ill.	D,CQ
05539900	West Branch Du Page River near West Chicago, Ill.	D,CQ
05540060	Kress Creek at West Chicago, Ill.	D
05540095	West Branch Du Page River near Warrenville, Ill.	D,CQ
05540200	St. Joseph Creek at Lisle, Ill.	D
05540210	East Branch Du Page River at Rt. 34 at Lisle, Ill.	CQ
05540290	Du Page River near Naperville, Ill.	CQ
05540500	Du Page River at Shorewood, Ill.	D,CQ
05541710	Aux Sable Creek near Morris, Ill.	CQ
05542000	Mazon River near Coal City, Ill.	D,CQ
05543500	Illinois River at Marseilles, Ill.	D,CQ
05546700	Fox River near Channel Lake, Ill.	CQ
05547000	Channel Lake near Antioch, Ill.	S
05547500	Fox Lake near Lake Villa, Ill.	S
05548000	Nippersink Lake at Fox Lake, Ill.	S
05548280	Nippersink Creek near Spring Grove, Ill.	D,CQ
05548500	Fox River at Johnsburg, Ill.	S
05549000	Boone Creek near McHenry, Ill.	C
05549500	Fox River near McHenry, Ill.	S
05549600	Fox River at Burtons Bridge, Ill.	CQ
05550000	Fox River at Algonquin, Ill.	D,CQ
05550500	Poplar Creek at Elgin, Ill.	D,CQ
05551000	Fox River at South Elgin, Ill.	CQ
05551200	Ferson Creek near St. Charles, Ill.	D
05551540	Fox River at Montgomery, Ill.	CQ
05551700	Blackberry Creek near Yorkville, Ill.	D,CQ
05551995	Somonauk Creek at Sheridan, Ill.	CQ
05552500	Fox River at Dayton, Ill.	D,CQ
05554000	North Fork Vermilion River near Charlotte, Ill.	C
05554490	Vermilion River at McDowell, Ill.	CQ
05554500	Vermilion River at Pontiac, Ill.	D
05555300	Vermilion River near Leonore, Ill.	D,CQ
05555950	Little Vermilion River at La Salle, Ill.	CQ

Table 2.--Surface-Water Stations--Continued

Station No.	Station	Type of data
05556200	Illinois River at Hennepin, Ill.	CQ
05556500	Big Bureau Creek at Princeton, Ill.	D,CQ
05557000	West Bureau Creek at Wyanet, Ill.	C,CQ
05557500	East Bureau Creek near Bureau, Ill.	C
05558300	Illinois River at Henry, Ill.	D,SD
05558995	Illinois River at Lacon, Ill.	CQ
05559900	Illinois River at Water Company at Peoria, Ill.	CQ
05562010	Farm Creek at Camp St. Bridge at East Peoria, Ill.	CQ
05563000	Kickapoo Creek near Kickapoo, Ill.	C
05563500	Kickapoo Creek at Peoria, Ill.	C
05563525	Kickapoo Creek at Bartonville, Ill.	CQ
05563800	Illinois River at Pekin, Ill.	CQ
05567000	Panther Creek near El Paso, Ill.	C
05567500	Mackinaw River near Congerville, Ill.	D
05567510	Mackinaw River below Congerville, Ill.	CQ,SD
05568000	Mackinaw River near Green Valley, Ill.	C
05568005	Mackinaw River below Green Valley, Ill.	CQ
05568500	Illinois River at Kingston Mines, Ill.	DS
05568775	Spoon River near Wyoming, Ill.	CQ
05568800	Indian Creek near Wyoming, Ill.	D,CQ
05568915	Spoon River near Dahinda, Ill.	CQ
05569500	Spoon River at London Mills, Ill.	D,CQ
05570000	Spoon River at Seville, Ill.	D,CQ
05570350	Big Creek at St. David, Ill.	D,CQ
05570360	Evelyn Branch near Bryant, Ill.	D,CQ
05570370	Big Creek near Bryant, Ill.	D,SD,CQ
05570380	Slug Run near Bryant, Ill.	D,CQ
05570500	Illinois River at Havana, Ill.	D
05570520	Illinois River at Power Company at Havana, Ill.	CQ
05570910	Sangamon River at Fisher, Ill.	D,CQ
05572000	Sangamon River at Monticello, Ill.	D
05572125	Sangamon R at Allerton Park nr Monticello, Ill.	CQ
05573504	Sangamon R at L Decatur Water Intake at Decatur, Ill.	CQ
05573540	Sangamon River at Route 48 at Decatur, Ill.	D,CQ
05573650	Sangamon River near Niantic, Ill.	CQ
05573800	Sangamon River at Roby, Ill.	CQ
05574500	Flat Branch near Taylorville, Ill.	CQ
05575500	South Fork Sangamon River at Kincaid, Ill.	C,CQ
05575570	Sangchris Lake near New City, Ill.	CQ
05576000	South Fork Sangamon River near Rochester, Ill.	DS

Table 2.--Surface-Water Stations--Continued

Station No.	Station	Type of data
05576022	South Fork Sangamon River below Rochester, Ill.	CQ
05576250	Sugar Creek near Springfield, Ill.	CQ
05576500	Sangamon River at Riverton, Ill.	D,CQ
05577500	Spring Creek at Springfield, Ill.	D
05577505	Spring C at Burns Lane Bridge at Springfield, Ill.	CQ
05578000	Sangamon River at Petersburg, Ill.	CQ
05578500	Salt Creek near Rowell, Ill.	D,CQ
05579500	Lake Fork near Cornland, Ill.	D,CQ
05580000	Kickapoo Creek at Waynesville, Ill.	D,CQ
05580500	Kickapoo Creek near Lincoln, Ill.	C,CQ
05580950	Sugar Creek near Bloomington, Ill.	D
05581500	Sugar Creek near Hartsburg, Ill.	C,CQ
05582000	Salt Creek near Greenview, Ill.	D,CQ
05583000	Sangamon River near Oakford, Ill.	D,CQ,SD
05583915	Sugar Creek near Frederick, Ill.	CQ
05584400	Drowning Fork at Bushnell, Ill.	C
05584500	La Moine River at Colmar, Ill.	D,CQ
05585000	La Moine River at Ripley, Ill.	D,CQ
05585275	Indian Creek at Arenzville, Ill.	CQ
05585500	Illinois River at Meredosia, Ill.	DS
05585830	McKee Creek at Chambersburg, Ill.	CQ
05586000	North Fork Mauvaise Terre Creek nr Jacksonville, Ill.	C
05586040	Mauvaise Terre Creek near Merritt, Ill.	CQ
05586100	Illinois River at Valley City, Ill.	CQ,SD
05586500	Hurricane Creek near Roodhouse, Ill.	C
05586600	Apple Creek near Eldred, Ill.	CQ
05586690	Macoupin Creek near Macoupin, Ill.	CQ
05587000	Macoupin Creek near Kane, Ill.	D,CQ
05587060	Illinois River at Hardin, Ill.	CQ
05587700	Wood River at East Alton, Ill.	CQ
05587900	Cahokia Creek at Edwardsville, Ill.	D,CQ
05588000	Indian Creek at Wanda, Ill.	D
05589490	Cahokia Canal near Collinsville, Ill.	CQ
05589510	Canteen Creek near Collinsville, Ill.	CQ
05589785	Harding Ditch at East St. Louis, Ill.	CQ
05590000	Kaskaskia Ditch at Bondville, Ill.	D
05590420	Kaskaskia River near Tuscola, Ill.	CQ
05590800	Lake Fork at Atwood, Ill.	D
05591200	Kaskaskia River at Cooks Mills, Ill.	D,CQ,SD,S/8
05591300	Kaskaskia River at Allenville, Ill.	CQ

Table 2.--Surface-Water Stations--Continued

Station No.	Station	Type of data
05591400	Jonathan Creek near Sullivan, Ill.	CQ
05591500	Asa Creek at Sullivan, Ill.	CQ
05591550	Whitley Creek near Allenville, Ill.	D,S/8
05591700	West Okaw River near Lovington, Ill.	D,CQ,S/8
05591950	Lake Shelbyville near Shelbyville, Ill.	R
05592000	Kaskaskia River at Shelbyville, Ill.	D,CQ
05592050	Robinson Creek near Shelbyville, Ill.	D,S/8
05592100	Kaskaskia River near Cowden, Ill.	D,CQ,S/8
05592195	Beck Creek at Herrick, Ill.	CQ
05592500	Kaskaskia River at Vandalia, Ill.	D,CQ,S/8
05592600	Hickory Creek near Bluff City, Ill.	S,CQ
05592800	Hurricane Creek near Mulberry Grove, Ill.	D,CQ,S/8
05592900	East Fork Kaskaskia River near Sandoval, Ill.	D,CQ,S/8
05592930	North Fork Kaskaskia River near Patoka, Ill.	CQ
05592990	Carlyle Lake near Carlyle, Ill.	R
05593000	Kaskaskia River at Carlyle, Ill.	D
05593010	Kaskaskia River below Carlyle, Ill.	CQ
05593020	Kaskaskia River near Posey, Ill.	S
05593505	Crooked Creek near Odin, Ill.	CQ
05593520	Crooked Creek near Hoffman, Ill.	D,CQ
05593575	Little Crooked Creek near New Minden, Ill.	D
05593600	Blue Grass Creek near Raymond, Ill.	C
05593785	Shoal Creek near Walshville, Ill.	CQ
05593900	East Fork Shoal Creek near Coffeen, Ill.	D
05594000	Shoal Creek near Breese, Ill.	D,CQ,S/8
05594090	Sugar Creek at Albers, Ill.	CQ
05594100	Kaskaskia River near Venedy Station, Ill.	D,CQ,SD,S/8
05594450	Silver Creek near Troy, Ill.	D,CQ
05594800	Silver Creek near Freeburg, Ill.	D,CQ,S/8
05595200	Richland Creek near Hecker, Ill.	D,CQ,S/8
05595280	Plum Creek near Baldwin, Ill.	CQ
05595400	Kaskaskia River at Roots, Ill.	CQ
05595540	Marys River at Welge, Ill.	CQ
05595700	Big Muddy River near Mt. Vernon, Ill.	S,CQ
05595730	Rayse Creek near Waltonville, Ill.	D,CQ,S/8
05595765	Big Muddy Subimpoundment nr Waltonville, Ill.	S
05595820	Casey Fork near Mt. Vernon, Ill.	D,S/8
05595830	Casey Fork at Rt. 37 near Mt. Vernon, Ill.	CQ
05595860	Casey Fork Subimpoundment near Bonnie, Ill.	S
05595950	Rend Lake near Benton, Ill.	R,CQ

Table 2.--Surface-Water Stations--Continued

Station No.	Station	Type of data
05596400	Middle Fork Big Muddy River near Benton, Ill.	CQ
05597000	Big Muddy River at Plumfield, Ill.	DS,CQ
05597040	Pond Creek at West Frankfort, Ill.	CQ
05597280	Little Muddy River near Elkville, Ill.	CQ
05597500	Crab Orchard Creek near Marion, Ill.	D,CQ
05598050	Crab Orchard C below CO Lake nr Carterville, Ill.	CQ
05598245	Crab Orchard Creek near Carbondale, Ill.	CQ
05599200	Beaucoup Creek near Vergennes, Ill.	CQ
05599500	Big Muddy River at Murphysboro, Ill.	DS,CQ,SD
05599540	Kinkaid Creek near Murphysboro, Ill.	CQ
05599565	Cedar Creek near Pomona, Ill.	CQ
05600000	Big Creek near Wetaug, Ill.	C
05600150	Cache River at Sandusky, Ill.	CQ

Table 3.--Ground-Water Stations

Abbreviations for type of data collected are:

L - Ground-water level measurement.
Q - Ground-water quality determination.
M - Description of subsurface material.
B - Well characteristics.

Abbreviations for ownership are:

ANL - Argonne National Laboratory
USGS - U.S. Geological Survey

Station No.	Local Well No.	Ownership	Type of data
	ADAMS COUNTY		
395216091234401	Mill Creek Water District #1	Municipal	Q,M,B
395223091234901	Mill Creek Water District #2	Municipal	Q,M,B
	ALEXANDER COUNTY		
371407089161901	Tamms #1	Municipal	L,Q,M,B
	BOONE COUNTY		
421422088510401	Four Season Mobile Home Park #1	Private	Q,M,B
421427088515401	Belvidere #8	Municipal	L,Q,M,B
421457088503301	Belvidere #5	Municipal	L,Q,M,B
421507088493201	Belvidere #7	Municipal	L,Q,M,B
421530088502401	Belvidere #3	Municipal	L,Q,M,B
421534088502001	Belvidere #2	Municipal	Q,M,B
421547088503501	Belvidere #4	Municipal	L,Q,M,B
421615088502701	Belvidere #6	Municipal	L,Q,M,B
421649088513801	Belvidere #9	Municipal	L,Q,M,B
421732088510701	Maple Crest Nursing Home #1	Private	Q,M,B
421806088531501	Park Meadowland West Mobile Home Park #1	Private	Q,M,B
422039088510801	Oak Lawn Mobile Home Park #1	Private	Q,M,B
422046088520901	Candlewick Lake Utility Co. #1	Private	L,Q,M,B
422157088491001	Poplar Grove #3	Municipal	Q,M,B
422158088491101	Poplar Grove #2	Municipal	Q,M,B
422356088442501	Capron #1	Municipal	Q,M,B
	BROWN COUNTY		
395323090385301	Versailles #1	Municipal	Q,M,B
395326090385001	Versailles #2	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	BUREAU COUNTY		
411727089302101	Tiskilwa #1	Municipal	Q,M,B
411727089302102	Tiskilwa #2	Municipal	L,Q,M,B
411928089403902	Buda #4	Municipal	Q,M,B
412017089472401	512	USGS	L
412017089472701	524	USGS	L
412019089472501	505	USGS	L
412022089472401	502	USGS	L
412121089441701	Sheffield #5	Municipal	Q,M,B
412123089441701	Sheffield #4	Municipal	L,Q,M,B
412134089105201	Dalzell #4	Municipal	Q,M,B
412136089105201	Dalzell #5	Municipal	Q,M,B
412157089350301	Wyanet #1	Municipal	L,Q,M,B
412220089280301	-	Helen Croisant	L
412232089274801	Princeton #6	Municipal	L,Q,M,B
412232089275201	Princeton #4	Municipal	Q,M,B
412242089125101	Ladd #1	Municipal	Q,M,B
412242089125201	Ladd #2	Municipal	L,Q,M,B
412534089215601	Malden #1	Municipal	Q,M,B
412538089215801	Malden #2	Municipal	L,Q,M,B
412608089234501	Dover #1	Municipal	Q,M,B
412703089134401	Cherry #2	Municipal	Q,M,B
412703089134402	Cherry #1	Municipal	Q,M,B
412721089401201	Manlius #2	Municipal	L,Q,M,B
412724089401401	Manlius #3	Municipal	L,Q,M,B
412827089145201	Arlington #3	Municipal	L,Q,M,B
412827089145202	Arlington #2	Municipal	Q,M,B
413147089165501	La Moille #2	Municipal	L,Q,M,B
413147089165701	La Moille #3	Municipal	Q,M,B
413323089275201	Ohio #5	Municipal	Q,M,B
413328089274501	Ohio #4	Municipal	Q,M,B
413330089353701	Walnut #5	Municipal	L,Q,M,B
413336089353601	Walnut #6	Municipal	Q,M,B
	CALHOUN COUNTY		
385658090845901	Brussels #1	Municipal	Q,M,B
390155090373401	Batchtown #1	Municipal	Q,M,B
390155090373402	Batchtown #2	Municipal	Q,M,B
391702090363301	Kampsville #2	Municipal	Q,M,B
391703090362501	Kampsville #3	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	CASS COUNTY		
395311090224201	Arenzville #1	Municipal	L,Q,M,B
395311090224202	Arenzville #2	Municipal	L,Q,M,B
400018090242501	Beardstown #11	Municipal	Q,M,B
400023090245501	Beardstown #16	Municipal	Q,M,B
400023090250101	Beardstown #15	Municipal	Q,M,B
400026090245701	Beardstown #14	Municipal	Q,M,B
400300090092801	Chandlerville #2	Municipal	Q,M,B
	CHAMPAIGN COUNTY		
395437088000001	Broadlands #2	Municipal	Q,M,B
395454088162801	Peostum #1	Municipal	Q,M,B
395454088162802	Pesotum #2	Municipal	Q,M,B
395639088272701	Ivesdale #1	Municipal	Q,M,B
395755088203201	Sadorus #3	Municipal	Q,M,B
395759088203101	Sadorus #2	Municipal	Q,M,B
395914088145601	Tolono #11	Municipal	Q,M,B
395915088145201	Tolono #9	Municipal	Q,M,B
395917088144601	Tolono #12	Municipal	Q,M,B
400118088044301	Sidney #2	Municipal	L,Q,M,B
400123088042001	Sidney #4	Municipal	L,Q,M,B
400124088041801	Sidney #3	Municipal	L,Q,M,B
400148087575601	Homer #2	Municipal	Q,M,B
400154087574601	Homer #1	Municipal	Q,M,B
400647087571901	Ogden #1	Municipal	Q,M,B
400651087570501	Ogden #3	Municipal	Q,M,B
400734088132201	Northern Ill. Water Corp. #41	Private	Q,M,B
400734088132601	Northern Ill. Water Corp. #42	Private	Q,M,B
400736088132701	Northern Ill. Water Corp. #47	Private	Q,M,B
400737088131901	Northern Ill. Water Corp. #45	Private	Q,M,B
400737088132601	Northern Ill. Water Corp. #35	Private	L,Q,M,B
400738088131501	Northern Ill. Water Corp. #40	Private	Q,M,B
400739088173501	Northern Ill. Water Corp. #58	Private	Q,M,B
400740088133001	Northern Ill. Water Corp. #43	Private	Q,M,B
400740088170601	Northern Ill. Water Corp. #57	Private	L,Q,M,B
400740088181801	Northern Ill. Water Corp. #61	Private	Q,M,B
400758088174101	Northern Ill. Water Corp. #60	Private	Q,M,B
400805088163601	Northern Ill. Water Corp. #53	Private	Q,M,B
400814088170601	Northern Ill. Water Corp. #56	Private	Q,M,B
400824088185301	Northern Ill. Water Corp. #55	Private	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	CHAMPAIGN COUNTY--Continued		
400835088170701	Northern Ill. Water Corp. #62	Private	L,Q,M,B
400836088185101	Northern Ill. Water Corp. #59	Private	Q,M,B
401134087581501	Royal #1	Municipal	Q,M,B
401134087581601	Royal #2	Municipal	L,Q,M,B
401421088113501	Thomasboro #1	Municipal	Q,M,B
401422088114501	Thomasboro #3	Municipal	Q,M,B
401423088113501	Thomasboro #2	Municipal	Q,M,B
401808087564401	Penfield #1	Municipal	Q,M,B
401809087564201	Penfield #2	Municipal	Q,M,B
401834088010901	Gifford #1	Municipal	L,Q,M,B
401906088210301	Fisher #4	Municipal	Q,M,B
401906088210701	Fisher #3	Municipal	Q,M,B
	CHRISTIAN COUNTY		
392636089233701	Palmer #1	Municipal	Q,M,B
393402089150101	Taylorville #2	Municipal	Q,M,B
393414089150101	Taylorville #3	Municipal	Q,M,B
393428089144701	Taylorville #4	Municipal	Q,M,B
393817089081801	Assumption #10	Municipal	L,Q,M,B
393915089262401	Edinburg #13	Municipal	Q,M,B
393917089460601	Edinburg #12	Municipal	Q,M,B
	CLARK COUNTY		
391813087534001	Casey #12	Municipal	Q,M,B
391820087535301	Casey #11	Municipal	Q,M,B
392417087392101	Marshall #4	Municipal	Q,M,B
392418087392101	Marshall #3	Municipal	Q,M,B
392431087391601	Marshall #2	Municipal	Q,M,B
	CLINTON COUNTY		
383037089374801	Damiansville #3	Municipal	Q,M,B
383223089364201	Albers #5	Municipal	Q,M,B
383236089363301	Albers #4	Municipal	Q,M,B
383320089324101	Germantown #1	Municipal	Q,M,B
383320089324301	Germantown #2	Municipal	Q,M,B
383320089324601	Germantown #3	Municipal	Q,M,B
383320089324801	Germantown #4	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	COOK COUNTY		
412832087380501	Steger #3	Municipal	Q,M,B
412853087373401	South Chicago Heights #3	Municipal	Q,M,B
412921087335101	Sauk Village #2	Municipal	Q,M,B
412959087415301	Park Forest #7	Municipal	Q,M,B
413412087473801	Tinley Park State Hospital #2	Private	Q,M,B
413930087595801	Lemont #2	Municipal	L,Q,M,B
413938087451001	Crestwood #1	Municipal	Q,M,B
414208087544501	DH-1	USGS	L,Q,M
414222087543601	DH-2	USGS	L,Q,M
414227087543701	DH-3	USGS	L,Q,M
414230087544201	DH-4	USGS	L,Q,M
414231087544001	DH-13	USGS	L,Q,M
414232087544101	DH-7	USGS	L,Q,M
414235087543901	DH-5	USGS	L,Q,M
414235087544001	DH-8	USGS	L,Q,M
414236087544001	DH-16	USGS	L,Q,M
414237087543901	DH-6	USGS	L,Q,M
414237087543902	DH-17	USGS	L,Q,M
414238087544001	DH-9	USGS	L,Q,M
414238087544002	DH-11		
414238087544003	DH-14	USGS	L,Q,M
414238087544004	DH-15	USGS	L,Q,M
414238087544101	DH-12	USGS	L,Q,M
414239087544101	DH-10	USGS	L,Q,M
414841087531901	La Grange #5	Municipal	L,Q,M,B
414843087530901	La Grange #6	Municipal	L,Q,M,B
415921088110401	Bartlett #3	Municipal	Q,M,B
415940088102501	Streamwood #4	Municipal	Q,M,B
415955088031301	Elk Grove Village #13	Municipal	L,Q,M,B
420016088051901	Schaumburg #12	Municipal	Q,M,B
420048088044501	Schaumburg #7	Municipal	Q,M,B
420117088105801	Streamwood #6	Municipal	Q,M,B
420145088103301	Streamwood #3	Municipal	Q,M,B
420145088103401	Streamwood #7	Municipal	Q,M,B
420146088103201	Streamwood #1	Municipal	L,Q,M,B
420146088103301	Streamwood #2	Municipal	Q,M,B
420146088103402	Streamwood #5	Municipal	Q,M,B
420322088030801	Schaumburg #10	Municipal	Q,M,B
420556088073902	Schaumburg #14	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	CRAWFORD COUNTY		
390026087365401	Robinson-Palestine Water Comm. #10	Municipal	Q,M,B
390027087370201	Robinson-Palestine Water Comm. #11	Municipal	Q,M,B
	DE WITT COUNTY		
400557089051201	Kenney #1	Municipal	Q,M,B
400909089054101	De Witt Co. Nursing Home #1	Private	Q,M,B
400910089054201	De Witt Co. Nursing Home #2	Private	Q,M,B
400912088584601	Westside Mobile Home Park #1	Private	Q,M,B
400913088584201	Westside Mobile Home Park #3	Private	Q,M,B
	DE KALB COUNTY		
413805088405101	Somonauk #1	Municipal	L,Q,M,B
413805088405102	Somonauk #2	Municipal	L,Q,M,B
413836088370001	Sandwich #3	Municipal	L,Q,M,B
413844088370601	Sandwich #2	Municipal	L,Q,M,B
413845088365501	Sandwich #1	Municipal	L,Q,M,B
414606088383701	Hinckley #2	Municipal	L,Q,M,B
414608088375201	Hinckley #3	Municipal	L,Q,M,B
415453088445301	De Kalb #7	Municipal	L,Q,M,B
415544088443701	De Kalb #4	Municipal	L,Q,M,B
415545088450501	De Kalb #8	Municipal	Q,M,B
415552088465601	De Kalb #10	Municipal	L,Q,M,B
415650088462501	De Kalb University Development #1	Private	Q,M,B
415656088464201	De Kalb University Development #2	Private	Q,M,B
415700088430801	De Kalb #11	Municipal	L,Q,M,B
415825088431901	Sycamore #7	Municipal	L,Q,M,B
415915088400501	Evergreen Mobile Home Park #3	Private	Q,M,B
415917088410701	Sycamore #1	Municipal	L,Q,M,B
415933088414601	Sycamore #6	Municipal	Q,M,B
420539088505501	Kirkland #1	Municipal	L,Q,M,B
420549088405801	Genoa #4	Municipal	L,Q,M,B
420552088413801	Genoa #3	Municipal	L,Q,M,B
	DOUGLAS COUNTY		
394801088274101	Atwood #3	Municipal	Q,M,B
394801088274201	Atwood #2	Municipal	Q,M,B
394802088094201	Camargo #2	Municipal	Q,M,B
394802088101001	Camargo #3	Municipal	Q,M,B
394804088094801	Camargo #1	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	DU PAGE COUNTY		
414322087565801	Rosewood Trace #2 (Local #3)	Municipal	L,Q,M,B
414325087570601	Rosewood Trace #3 (Local #2)	Municipal	Q,M,B
414425087574701	Hinswood Subdivision #2	Municipal	L,Q,M,B
414431087580501	Hinswood Subdivision #1	Municipal	L,Q,M,B
414501088140601	Aurora #22	Municipal	Q,M,B
414701087570101	Clarendon Water Co. #2	Private	Q,M,B
414843087585101	Liberty Park Homeowners Assn. #3	Private	Q,M,B
414843087585501	Liberty Park Homeowners Assn. #2	Private	Q,M,B
415034088075501	Citizens Arrowhead #1	Private	Q,M,B
415040088024001	Citizens Valley View #6	Private	L,Q,M,B
415041087584201	Oak Brook #3	Municipal	Q,M,B
415119087565701	Elmhurse #8	Municipal	Q,M,B
415131087595601	York Center Co-op #1	Private	Q,M,B
415131087595602	York Center Co-op #2	Private	Q,M,B
415259087584101	Villa Park #4	Municipal	Q,M,B
415630088071501	Bloomingdale #9	Municipal	Q,M,B
415710088021501	Nordic Park Water & Sewer #1	Municipal	Q,M,B
415715088015601	Nordic Park Water & Sewer #3	Municipal	Q,M,B
415814088064701	Roselle #6	Municipal	L,Q,M,B
415822088104401	Bartlett #6	Municipal	Q,M,B
415826088103401	Bartlett #4	Municipal	Q,M,B
415838088114101	Bartlett #7	Municipal	Q,M,B
415839088113901	Bartlett #5	Municipal	Q,M,B
415846087554301	Itasca #8	Municipal	L,Q,M,B
	EDGAR COUNTY		
393248087561001	Kansas #4	Municipal	Q,M,B
393251087561701	Kansas #5	Municipal	Q,M,B
393844087512101	Redmon #1	Municipal	Q,M,B
394325087551201	Brocton #2	Municipal	Q,M,B
394327087551001	Brocton #1	Municipal	Q,M,B
394751087520401	Hume #1	Municipal	Q,M,B
394751087520402	Hume #2	Municipal	Q,M,B
394754087482201	Metcalf #1	Municipal	L,Q,M,B
394827087403301	Chrisman #4	Municipal	Q,M,B
394827087403302	Chrisman #5	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	FAYETTE COUNTY		
390759089073101	Ramsey #5	Municipal	Q,M,B
390759089073102	Ramsey #6	Municipal	Q,M,B
	FORD COUNTY		
402719088082301	Paxton #8	Municipal	L,Q,M,B
402750088161701	Elliott #3	Municipal	Q,M,B
402750088161901	Elliott #2	Municipal	Q,M,B
402755088061201	Paxton #6	Municipal	Q,M,B
402756088060301	Paxton #5	Municipal	Q,M,B
402816088223401	Gibson City #2	Municipal	L,Q,M,B
402817088222201	Gibson City #1	Municipal	L,Q,M,B
402818088224901	Gibson City #4	Municipal	L,Q,M,B
402826088222401	Gibson City #3	Municipal	L,Q,M,B
403405088150001	Melvin #3	Municipal	Q,M,B
403406088145701	Melvin #4	Municipal	Q,M,B
403510088225701	Sibley #1	Municipal	Q,M,B
403540088231401	Sibley #3	Municipal	Q,M,B
403658088111201	Roberts #6	Municipal	Q,M,B
403700088111301	Roberts #5	Municipal	Q,M,B
404530088114501	Piper City #7	Municipal	Q,M,B
404532088111201	Piper City #6	Municipal	Q,M,B
405611088141701	Kempton #2	Municipal	Q,M,B
405614088142001	Kempton #4	Municipal	Q,M,B
	FULTON COUNTY		
402108090194101	Ipava #1	Municipal	Q,M,B
402151090111501	Lewistown #11	Municipal	Q,M,B
402151090111701	Lewistown #12	Municipal	Q,M,B
402152090111401	Lewistown #10	Municipal	Q,M,B
402152090111601	Lewistown #8	Municipal	Q,M,B
402154090254101	Table Grove #1	Municipal	L,Q,M,B
402800090054501	Bryant #1	Municipal	Q,M,B
403759090094601	Fairview #3	Municipal	Q,M,B
404013090223501	Avon #2	Municipal	Q,M,B
404016090223601	Avon #1	Municipal	Q,M,B
404155089593201	Farmington #1	Municipal	Q,M,B
404234090162901	London Mills #2	Municipal	Q,M,B
404234090163101	London Mills #1	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	GALLATIN COUNTY		
375417089064701	New Haven #1	Municipal	Q,M,B
375419088065001	New Haven #2	Municipal	Q,M,B
	GREENE COUNTY		
391330090202701	Kane #1	Municipal	Q,M,B
	GRUNDY COUNTY		
411030088163001	South Wilmington #1	Municipal	Q,M,B
411324088235701	Old Mazon Mobile Home Park #1	Private	Q,M,B
411331088155301	Braceville #2	Municipal	Q,M,B
412646088193401	Shady Oaks Mobile Home Park #3	Private	Q,M,B
412648088193101	Shady Oaks Mobile Home Park #4	Private	Q,M,B
412652088193001	Shady Oaks Mobile Home Park #6	Private	Q,M,B
	HANCOCK COUNTY		
401358091033801	Bowen #3	Municipal	Q,M,B
401401091033001	Bowen #7	Municipal	Q,M,B
401402091033401	Bowen #6	Municipal	Q,M,B
401409091034201	Bowen #4	Municipal	Q,M,B
401413091034701	Bowen #8	Municipal	Q,M,B
401518091123901	West Point #1	Municipal	Q,M,B
401518091123902	West Point #2	Municipal	Q,M,B
401923090550201	Plymouth #1	Municipal	Q,M,B
403458090575601	La Harpe #1	Municipal	Q,M,B
403718091140801	Leisureland Mobile Home Park #1	Private	Q,M,B
403718091141001	Leisureland Mobile Home Park #2	Private	Q,M,B
403719091140801	Leisureland Mobile Home Park #3	Private	Q,M,B
	HENDERSON COUNTY		
404147090492701	Raritan #1	Municipal	Q,M,B
404417090541501	Stronghurst #3	Municipal	Q,M,B
404417090541502	Stronghurst #4	Municipal	Q,M,B
404628090495401	Media #1	Municipal	Q,M,B
405106090515701	Biggsville #2	Municipal	Q,M,B
405616090565201	Oquawka #3	Municipal	Q,M,B
405753090562201	Delabar State Park #4	State	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	HENRY COUNTY		
411000090024001	Galva #3	Municipal	Q,M,B
411002090023401	Galva #4	Municipal	Q,M,B
411129090225701	Alpha #2	Municipal	Q,M,B
411335089555201	Kewanee #4	Municipal	Q,M,B
411449089553401	Kewanee #1	Municipal	Q,M,B
411454089553401	Kewanee #2	Municipal	Q,M,B
411815090112901	Cambridge #3	Municipal	Q,M,B
411816090112901	Cambridge #2	Municipal	Q,M,B
412113090225601	Orion #1	Municipal	Q,M,B
412117090220601	Orion #2	Municipal	Q,M,B
412832090082901	Geneseo #25	Municipal	Q,M,B
412843090082801	Geneseo #26	Municipal	Q,M,B
	IROQUOIS COUNTY		
403059088041201	Loda #1	Municipal	Q,M,B
403059088041202	Loda #2	Municipal	Q,M,B
403713087413901	Milford #7	Municipal	L,Q,M,B
403715087413901	Milford #8	Municipal	L,Q,M,B
	JACKSON COUNTY		
373755089301601	Grand Tower #1	Municipal	Q,M,B
373757089301701	Grand Tower #2	Municipal	Q,M,B
374307089290401	Gorham #1	Municipal	Q,M,B
	JERSEY COUNTY		
385810090323801	Pere Marquette #2	State	Q,M,B
390621090344301	Jerseyville #1	Municipal	Q,M,B
390622090344901	Jerseyville #2	Municipal	Q,M,B
	KANE COUNTY		
414346088191001	Oak Grove Mobile Home Park #2	Private	Q,M,B
414346088191101	Oak Grove Mobile Home Park #1	Private	Q,M,B
414356088183101	Patterson Mobile Home Park #1	Private	Q,M,B
414407088190501	Aurora #16	Municipal	Q,M,B
414421088171301	Ray's Mobile Home Park #1	Private	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	KANE COUNTY--Continued		
414423088171501	Ray's Mobile Home Park #2	Private	Q,M,B
414423088230801	Aurora #23	Municipal	Q,M,B
414507088203201	Aurora #15	Municipal	Q,M,B
414508088220801	Aurora #19	Municipal	Q,M,B
414523088185901	Aurora #8	Municipal	Q,M,B
414529088264302	Sugar Grove #3	Municipal	L,Q,M,B
414531088162601	Ogden Gardens Subdivision #1	Municipal	Q,M,B
414531088164201	Aurora #18	Municipal	Q,M,B
414539088162601	Ogden Gardens Subdivision #2	Municipal	Q,M,B
414542088161701	Ogden Gardens Subdivision #3	Municipal	Q,M,B
414557088231801	Aurora #21	Municipal	Q,M,B
414604088162401	Dearborn Mobile Home Park #1	Private	Q,M,B
414610088171501	Breazeale Mobile Home Park #1	Private	Q,M,B
414611088171801	Breazeale Mobile Home Park #2	Private	Q,M,B
414614088171701	Margaret'S Hi-Acre Mobile Home Park #1	Private	Q,M,B
414617088171201	Margaret'S Hi-Acre Mobile Home Park #3	Private	Q,M,B
414619088171601	Margaret's Hi-Acre Mobile Home Park #2	Private	Q,M,B
414653088204901	Aurora #25	Municipal	Q,M,B
414702088250501	Prestbury Utility Subdivision #1	Municipal	Q,M,B
414805088160201	Aurora #20	Municipal	Q,M,B
414810088202701	North Aurora #4	Municipal	L,Q,M,B
414829088184901	North Aurora #5	Municipal	Q,M,B
414831088193801	North Aurora #3	Municipal	L,Q,M,B
414922088195101	Mooseheart #2	Municipal	Q,M,B
414948088195301	Mooseheart #3	Municipal	Q,M,B
415019088174301	Batavia #5	Municipal	Q,M,B
415052088183001	Batavia #3	Municipal	Q,M,B
415058088182901	Batavia #2	Municipal	Q,M,B
415102088180101	Batavia #4	Municipal	Q,M,B
415239088175801	Geneva #7	Municipal	Q,M,B
415312088182601	Geneva #2	Municipal	Q,M,B
415320088180401	Geneva #5	Municipal	Q,M,B
415330088281701	Elburn #1	Municipal	L,Q,M,B
415335088281701	Elburn #2	Municipal	L,Q,M,B
415345088190801	Geneva #3	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	KANE COUNTY--Continued		
415355088281501	Elburn #3	Municipal	L,Q,M,B
415425088185401	St. Charles #5	Municipal	L,Q,M,B
415427088354901	Maple Park #2	Municipal	Q,M,B
415450088202201	St. Charles #7	Municipal	Q,M,B
415451088161801	St. Charles #8	Municipal	Q,M,B
415451088184601	St. Charles #3	Municipal	L,Q,M,B
415457088184801	St. Charles #4	Municipal	Q,M,B
415642088263101	Ferson Creek Utility #3	Private	Q,M,B
415642088263102	Ferson Creek Utility #2	Private	Q,M,B
415734088175001	St. Charles Skyline #1	Municipal	Q,M,B
415734088175301	St. Charles Skyline #2	Municipal	Q,M,B
415741088192201	River Grange Lake Subdivision #1	Municipal	Q,M,B
415924088171701	South Elgin #3	Municipal	L,Q,M,B
420000088181301	South Elgin #4	Municipal	L,Q,M,B
420032088171601	South Elgin #5	Municipal	L,Q,M,B
420306088325601	Burlington #2	Municipal	Q,M,B
420306088325602	Burlington #3	Municipal	Q,M,B
420309088325301	Burlington #1	Municipal	Q,M,B
420553088320701	Hampshire #4	Municipal	Q,M,B
420558088312301	Hampshire #5	Municipal	Q,M,B
420604088170201	West Dundee #4	Municipal	Q,M,B
420605088170501	West Dundee #3	Municipal	Q,M,B
420715088165101	Carpentersville #3	Municipal	Q,M,B
420720088162101	Lake Marian Water Corp. #3	Private	Q,M,B
420726088160801	Lake Marian Water Corp. #1	Private	Q,M,B
420727088153901	Carpentersville #5	Municipal	L,Q,M,B
420754088161401	Lake Marian Water Corp. #2	Private	Q,M,B
	KANKAKEE COUNTY		
410508087475601	Aroma Park #2	Municipal	L,Q,M,B
	KENDALL COUNTY		
413730088262601	Yorkville #2	Municipal	L,Q,M,B
413957088313001	Plano #5	Municipal	Q,M,B
413958088313501	Plano #4	Municipal	L,Q,M,B
414000088313301	Plano #3	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	KNOX COUNTY		
404307090242201	St. Augustine #1	Municipal	Q,M,B
404310090244601	St. Augustine #2	Municipal	Q,M,B
404643090002301	Yates City #1	Municipal	Q,M,B
404644090005601	Yates City #3	Municipal	Q,M,B
404816090234701	Abingdon #2	Municipal	Q,M,B
404821090235001	Abingdon #3	Municipal	Q,M,B
405434090164701	Knoxville #3	Municipal	Q,M,B
405435090165101	Knoxville #2	Municipal	Q,M,B
405438090164701	Knoxville #1	Municipal	L,Q,M,B
405524090010301	Williamsfield #2	Municipal	Q,M,B
405526090010301	Williamsfield #3	Municipal	Q,M,B
410128090164301	Wataga #1	Municipal	Q,M,B
410131090212201	Henderson #1	Municipal	Q,M,B
410422090132601	Oneida #2	Municipal	Q,M,B
410422090133001	Oneida #1	Municipal	Q,M,B
410647090094901	Altona #1	Municipal	Q,M,B
	LAKE COUNTY		
420941088082701	Barrington #3	Municipal	L,Q,M,B
421244088082401	Lake Barrington Shores #1	Municipal	L,Q,M,B
421245088083601	Lake Barrington Shores #2	Municipal	Q,M,B
421245088084201	Lake Barrington Shores #3	Municipal	Q,M,B
421513088010201	West Shoreland #2	Municipal	Q,M,B
421513088010301	West Shoreland #1	Municipal	Q,M,B
421656088113801	Island Lake Water Co. #2	Private	Q,M,B
421717087593701	Libertyville #10	Municipal	L,Q,M,B
421724087571101	Libertyville #5	Municipal	L,Q,M,B
422320088091801	Fox Lake #3	Municipal	Q,M,B
422335087594901	Grandwood Park #2	Municipal	L,Q,M,B
422356088105401	Fox Lake #1	Municipal	Q,M,B
422406087541901	Countryside Estates #1	Municipal	Q,M,B
422407088073801	Fox Lake Hills Subdivision #2	Municipal	L,Q,M,B
422410087541801	Countryside Estates #2	Municipal	Q,M,B
422448088041901	Lake Villa #5	Municipal	L,Q,M,B
422451088073601	Fox Lake Hills Subdivision #1	Municipal	L,Q,M,B
422526088012002	Lindenhurst #6	Municipal	Q,M,B
422546088112901	Fox Lake - Plant 2 #1	Municipal	Q,M,B
422546088113201	Fox Lake - Plant 2 #2	Municipal	L,Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	LAKE COUNTY--Continued		
422554088014701	Lindenhurst #3	Municipal	Q,M,B
422554088014702	Lindenhurst #4	Municipal	Q,M,B
422554088014703	Lindenhurst #5	Municipal	Q,M,B
422812088052201	Antioch #5	Municipal	Q,M,B
422828088151301	Antioch #4	Municipal	L,Q,M,B
422844088055101	Antioch #2	Municipal	L,Q,M,B
422844088055201	Antioch #1	Municipal	Q,M,B
	LA SALLE COUNTY		
405905089024301	Rutland #4	Municipal	Q,M,B
405907089024401	Rutland #3	Municipal	Q,M,B
	LAWRENCE COUNTY		
383444087391701	St. Francisville #6	Municipal	Q,M,B
385014087402501	Birds-Pinkstaff PWD #1	Municipal	Q,M,B
385014087402502	Birds-Pinkstaff PWD #2	Municipal	Q,M,B
	LEE COUNTY		
414136089051101	Compton #3	Municipal	Q,M,B
415050089011301	Steward #2	Municipal	Q,M,B
415051089011301	Steward #1	Municipal	Q,M,B
	LIVINGSTON COUNTY		
404410088305501	Fairbury #1	Municipal	Q,M,B
404413088305501	Fairbury #2	Municipal	Q,M,B
404415088305301	Fairbury #5	Municipal	Q,M,B
404431088240401	Forrest #3	Municipal	Q,M,B
404431088241401	Forrest #1	Municipal	Q,M,B
404515088174601	Chatsworth #2	Municipal	Q,M,B
404533088173901	Chatsworth #3	Municipal	Q,M,B
404551088172901	Chatsworth #4	Municipal	Q,M,B
404604088173001	Chatsworth #5	Municipal	Q,M,B
405230088523101	Flanagan #2	Municipal	L,Q,M,B
405236088513401	Flanagan #3	Municipal	L,Q,M,B
405246088161101	Cullom #3	Municipal	Q,M,B
405249088155201	Cullom #2	Municipal	Q,M,B
405352088243001	Saunemin #6	Municipal	Q,M,B
405352088243201	Saunemin #5	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	LIVINGSTON COUNTY--Continued		
405930088435001	Cornell #1	Municipal	L,Q,M,B
405932088435401	Cornell #2	Municipal	Q,M,B
410526088254901	Dwight #7	Municipal	L,Q,M,B
410532088253102	Dwight #4	Municipal	L,Q,M,B
410532088253103	Dwight #5	Municipal	Q,M,B
410535088254301	Dwight #6	Municipal	L,Q,M,B
	LOGAN COUNTY		
395741089095201	Latham #3	Municipal	Q,M,B
395741089100301	Latham #6	Municipal	Q,M,B
400312089165401	Mount Pulaski #6	Municipal	Q,M,B
401537089140301	Atlanta #1	Municipal	Q,M,B
401537089140302	Atlanta #7	Municipal	Q,M,B
401538089134901	Atlanta #2	Municipal	Q,M,B
401543089134701	Atlanta #5	Municipal	Q,M,B
	MACON COUNTY		
394010089054801	Blue Mound #3	Municipal	Q,M,B
394242089005701	Macon #5	Municipal	L,Q,M,B
394245089005701	Macon #4	Municipal	L,Q,M,B
395150089094101	Niantic #4	Municipal	Q,M,B
395152089094101	Niantic #5	Municipal	Q,M,B
395200089083301	Harristown #1	Municipal	Q,M,B
395211088580301	McKinley Trailer Park #1	Private	Q,M,B
395250088510601	Long Creek Public Water Dist. #1	Municipal	L,Q,M,B
395352088511501	Long Creek Public Water Dist. #2	Municipal	Q,M,B
395606088570901	Forsyth #3	Municipal	L,Q,M,B
395606088571101	Forsyth #2	Municipal	Q,M,B
395606088571201	Forsyth #1	Municipal	L,Q,M,B
395638088513901	Oreana #3	Municipal	L,Q,M,B
395640088515501	Oreana #1	Municipal	L,Q,M,B
395640088515502	Oreana #2	Municipal	L,Q,M,B
395645088571701	Forsyth #4	Municipal	L,Q,M,B
395858088492801	Argenta #1	Municipal	L,Q,M,B
400221088572101	Maroa #3	Municipal	Q,M,B
400222088571401	Maroa #2	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of dat
	MACOUPIN COUNTY		
391408090071501	Chesterfield #1	Municipal	Q,M,B
391411090072001	Chesterfield #2	Municipal	Q,M,B
	MADISON COUNTY		
384114090005201	Troy #1	Municipal	L,Q,M,B
384114090005401	Troy #2	Municipal	L,Q,M,B
384115090005501	Troy #3	Municipal	L,Q,M,B
384158090025101	Holiday Mobile Home Park #1	Private	Q,M,B
384352090004101	Maryville #1	Municipal	Q,M,B
384352090004401	Maryville #2	Municipal	Q,M,B
384353090004201	Maryville #3	Municipal	Q,M,B
384417090005201	Glen Carbon #4	Municipal	Q,M,B
384418090004901	Glen Carbon #5	Municipal	Q,M,B
384418090005101	Glen Carbon #6	Municipal	Q,M,B
384650089480101	Marine #1	Municipal	Q,M,B
384650089480102	Marine #2	Municipal	Q,M,B
384740090022701	Edwardsville #8	Municipal	Q,M,B
384741090022601	Edwardsville #7	Municipal	Q,M,B
384741090022701	Edwardsville #3	Municipal	Q,M,B
384743090022301	Edwardsville #5	Municipal	Q,M,B
384823090034901	Roxana #9	Municipal	L,Q,M,B
384823090035101	Roxana #8	Municipal	L,Q,M,B
384919089480601	Marine #3	Municipal	Q,M,B
384955090055801	Hartford #4	Municipal	Q,M,B
384957090055601	Hartford #2	Municipal	L,Q,M,B
384957090055701	Hartford #3	Municipal	Q,M,B
385126090064601	Wood River #5	Municipal	Q,M,B
385127090065001	Wood River #2	Municipal	Q,M,B
385127090065201	Wood River #1	Municipal	Q,M,B
385235090072601	East Alton #2	Municipal	Q,M,B
385235090072701	East Alton #1	Municipal	Q,M,B
385236090072601	East Alton #4	Municipal	Q,M,B
385236090072701	East Alton #3	Municipal	Q,M,B
385317089480501	Hamel #3	Municipal	Q,M,B
385320089480601	Hamel #2	Municipal	Q,M,B
385321089481001	Hamel #4	Municipal	Q,M,B
385618089521901	Worden #8	Municipal	Q,M,B
385621089522001	Worden #9	Municipal	L,Q,M,B
385646089454501	Livingston #6	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	MARSHALL COUNTY		
405828089135401	La Rose #1	Municipal	Q,M,B
405828089135402	La Rose #2	Municipal	Q,M,B
410134089244501	Lacon #1	Municipal	Q,M,B
410134089244502	Lacon #2	Municipal	Q,M,B
410134089244503	Lacon #3	Municipal	Q,M,B
410136089262201	Sparland #2	Municipal	Q,M,B
410136089262202	Sparland #3	Municipal	Q,M,B
410208089132401	Varna #2	Municipal	Q,M,B
410230089160601	Varna #3	Municipal	Q,M,B
410445089153501	Lake Wildwood Utility Corp. #1	Private	Q,M,B
410614089114901	Magnolia #4	Municipal	Q,M,B
410614089114902	Magnolia #5	Municipal	Q,M,B
410633089211701	Henry #3	Municipal	Q,M,B
410633089211801	Henry #4	Municipal	Q,M,B
410733089220501	Henry #5	Municipal	Q,M,B
	MASON COUNTY		
401154089415601	Mason City #5	Municipal	L,Q,M,B
401214089414501	Mason City #3	Municipal	L,Q,M,B
401354089504001	Easton #1	Municipal	L,Q,M,B
401754090032001	Havana #5	Municipal	Q,M,B
401802090032801	Havana #4	Municipal	Q,M,B
401811089361601	San Jose #5	Municipal	Q,M,B
	McDONOUGH COUNTY		
403329090403801	Good Hope #1	Municipal	Q,M,B
403329090403802	Good Hope #2	Municipal	Q,M,B
	McHENRY COUNTY		
421648088125101	Island Lake #2	Municipal	Q,M,B
421649088125001	Island Lake #1	Municipal	L,Q,M,B
421906088153601	McHenry Shores Water Co. #1	Private	Q,M,B
	McLEAN COUNTY		
401842089004701	Heyworth #1	Municipal	L,Q,M,B
401845089004601	Heyworth #2	Municipal	Q,M,B
401851089102401	McLean #4	Municipal	Q,M,B
401855089101801	McLean #3	Municipal	L,Q,M,B
402108088460801	Le Roy #8	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	McLEAN COUNTY--County		
402112088455601	Le Roy #4	Municipal	Q,M,B
402112088460001	Le Roy #5	Municipal	Q,M,B
402119088460201	Le Roy #6	Municipal	Q,M,B
402455088434801	Moraine View State Park #12	State	Q,M,B
402601089131301	Stanford #3	Municipal	Q,M,B
402604089132201	Stanford #4	Municipal	Q,M,B
402913089010401	Normal #13	Municipal	L,Q,M,B
402913089102901	Normal #102	Municipal	L,Q,M,B
402914089094901	Normal #101	Municipal	L,Q,M,B
402915089011401	Normal #14	Municipal	L,Q,M,B
402958088595201	Normal #10	Municipal	L,Q,M,B
402958089001401	Normal #11	Municipal	L,Q,M,B
402959089000201	Normal #9	Municipal	L,Q,M,B
403036088583001	Normal #8	Municipal	L,Q,M,B
403044088585501	Normal #4	Municipal	L,Q,M,B
403049088582901	Normal #6	Municipal	L,Q,M,B
403144089103001	Danvers #3	Municipal	L,Q,M,B
403144089103002	Danvers #4	Municipal	L,Q,M,B
403629088284601	Cropsey Comm. Water Co. #2	Private	Q,M,B
403629088284602	Cropsey Comm. Water Co. #1	Private	Q,M,B
	MENARD COUNTY		
395718089461701	Athens #3	Municipal	Q,M,B
400041089503601	Petersburg #1	Municipal	Q,M,B
400043089502201	Petersburg #6	Municipal	Q,M,B
400043089503601	Petersburg #4	Municipal	Q,M,B
400505089495601	Petersburg #7	Municipal	Q,M,B
400551089444201	Greenview #3	Municipal	Q,M,B
400553089444201	Greenview #4	Municipal	Q,M,B
400623089361201	Middletown #2	Municipal	Q,M,B
	MERCER COUNTY		
410605090555101	Keithsburg #1	Municipal	Q,M,B
410605090555102	Keithsburg #2	Municipal	Q,M,B
410606090472801	Seaton #1	Municipal	Q,M,B
410610090448001	Seaton #2	Municipal	Q,M,B
411012090593101	New Boston #1	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	MERCER COUNTY--Continued		
411012090593102	New Boston #2	Municipal	Q,M,B
411147090524101	Joy #2	Municipal	Q,M,B
411204090450001	Aledo #1	Municipal	Q,M,B
411204090450201	Aledo #2	Municipal	Q,M,B
411209090351501	Viola #1	Municipal	Q,M,B
411209090351502	Viola #2	Municipal	Q,M,B
411536090363001	Matherville #1	Municipal	Q,M,B
411537090363701	Matherville #2	Municipal	Q,M,B
411913090302201	Sherrard #1	Municipal	Q,M,B
411913090302202	Sherrard #2	Municipal	Q,M,B
	MONROE COUNTY		
381238090160001	Maeystown #1	Municipal	L,Q,M,B
381611090084101	Timber Lakes Estates Subdivision #1	Municipal	Q,M,B
381745090185301	Valmeyer #3	Municipal	Q,M,B
381749090185301	Valmeyer #4	Municipal	Q,M,B
	MONTGOMERY COUNTY		
391734089174701	Nokomis #7	Municipal	Q,M,B
391736089174601	Nokomis #6	Municipal	Q,M,B
391742089174201	Nokomis #4	Municipal	Q,M,B
391802089171901	Nokomis #10	Municipal	Q,M,B
391844089330401	Raymond #2	Municipal	Q,M,B
391845089330801	Raymond #1	Municipal	L,Q,M,B
391911089325901	Raymond #4	Municipal	Q,M,B
392237089394401	Waggoner #1	Municipal	Q,M,B
392245089394401	Waggoner #2	Municipal	Q,M,B
392544089394401	Farmersville #1	Municipal	
392546089391301	Farmersville #2	Municipal	Q,M,B
392704089411001	Farmersville #4	Municipal	Q,M,B
	MOULTRIE COUNTY		
393333088364101	Sullivan #3	Municipal	Q,M,B
393337088363501	Sullivan #2	Municipal	Q,M,B
393340088363501	Sullivan #1	Municipal	Q,M,B
393811088415601	Bethany #7	Municipal	Q,M,B
393814088415001	Bethany #6	Municipal	L,Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	MOULTRIE COUNTY--Continued		
393837088444801	Bethany #1	Municipal	Q,M,B
393837088444802	Bethany #4	Municipal	Q,M,B
394253088465601	Dalton City #3	Municipal	Q,M,B
394256088375401	Lovington #8	Municipal	Q,M,B
394256088464801	Dalton City #2	Municipal	Q,M,B
394257088375101	Lovington #5	Municipal	Q,M,B
394310088375901	Lovington #7	Municipal	Q,M,B
394343088281801	Arthur #6	Municipal	Q,M,B
394409088281901	Arthur #3	Municipal	Q,M,B
394654088273001	Arthur #7	Municipal	Q,M,B
	OGLE COUNTY		
415417089033601	Rochelle #10	Municipal	Q,M,B
415430089024601	Rochelle #8	Municipal	L,Q,M,B
415502089075601	Shangra La Mobile Home Park #2	Private	Q,M,B
415506089075601	Shangra La Mobile Home Park #1	Private	Q,M,B
415509089032801	Rochelle #9	Municipal	Q,M,B
415513089041001	Rochelle #4	Municipal	L,Q,M,B
415513089080501	Woodlawn Utility Corp. #2	Private	Q,M,B
415513089213901	New Landing Utility, Inc. #9	Private	Q,M,B
415552088574301	Creston #2	Municipal	L,Q,M,B
415600089035701	Rochelle #7	Municipal	L,Q,M,B
415615089062001	Rolling Green Estates Mobile Home Park #1	Private	Q,M,B
415643089042801	Askvig Improvement Assoc. #102	Municipal	Q,M,B
415647089042501	Askvig Improvement Assoc. #101	Municipal	Q,M,B
415703089040201	Hillcrest #1	Municipal	L,Q,M,B
415938089344101	Polo #3	Municipal	Q,M,B
415938089344201	Polo #2	Municipal	Q,M,B
420019089203801	Oregon #4	Municipal	L,Q,M,B
420049089175301	Hickory Heights Subdivision #1	Municipal	Q,M,B
420055089194901	Oregon #2	Municipal	Q,M,B
420055089195501	Oregon #3	Municipal	L,Q,M,B
420240089255601	Mt. Morris #4	Municipal	L,Q,M,B
420251089255401	Mt. Morris #2	Municipal	L,Q,M,B
420307089255701	Mt. Morris #3	Municipal	Q,M,B
420323089214801	Rockvale Corp. #2	Private	Q,M,B
420342089203901	Rockvale Corp. #1	Private	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	OGLE COUNTY--Continued		
420531089042801	Rolling Meadows Mobile Home Park #1	Private	Q,M,B
420611089104101	Stillman Valley #2	Municipal	L,Q,M,B
420623089103501	Stillman Valley #1	Municipal	L,Q,M,B
420651089142401	Nordic Woods #1	Municipal	Q,,M,B
420716089345301	Forreston #2	Municipal	L,Q,M,B
420720089164801	Leaf River #3	Municipal	L,Q,M,B
420730089152701	Byron #1	Municipal	Q,M,B
420730089152702	Byron #2	Municipal	Q,M,B
420736089344401	Forreston #1	Municipal	L,Q,M,B
420739089132901	Byron #3	Municipal	Q,M,B
	PEORIA COUNTY		
404209089383301	Pleasant Valley PWD #2	Municipal	Q,M,B
404214089383101	Pleasant Valley PWD #3	Municipal	L,Q,M,B
404511090004001	Elmwood #3	Municipal	Q,M,B
404531089335601	Peoria Heights #9	Municipal	L,Q,M,B
404534089340701	Peoria Heights #10	Municipal	Q,M,B
404536089340701	Peoria Heights #8	Municipal	L,Q,M,B
404554089340401	Illinois American Water Co. #7	Private	L,Q,M,B
404606089340701	Illinois American Water Co. #10	Private	L,Q,M,B
404625089580201	Elmwood #1	Municipal	Q,M,B
404821089344701	Brookview Subdivision #1	Municipal	Q,M,B
404821089344702	Brookview Subdivision #2	Municipal	Q,M,B
405104089392001	Meadowood Subdivision #4	Municipal	Q,M,B
405113089392101	Meadowood Subdivision #3	Municipal	Q,M,B
405122089393701	Meadowood Subdivision #1	Municipal	Q,M,B
405508089294401	Chillicothe #2	Municipal	Q,M,B
405508089294801	Chillicothe #3	Municipal	Q,M,B
405525089452201	Princeville #3	Municipal	Q,M,B
405539089294201	Chillicothe #6	Municipal	Q,M,B
405553089452101	Princeville #1	Municipal	Q,M,B
405553089452102	Princeville #2	Municipal	L,Q,M,B
	PIATT COUNTY		
394754088353401	Hammond #1	Municipal	Q,M,B
400044088432901	Cisco #3	Municipal	Q,M,B
400046088432801	Cisco #2	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	PIKE COUNTY		
392605090524601	Pleasant Hill #2	Municipal	Q,M,B
392607090524301	Pleasant Hill #4	Municipal	Q,M,B
392607090524601	Pleasant Hill #3	Municipal	Q,M,B
393819091055501	New Canton #1	Municipal	L,Q,M,B
393819091055502	New Canton #3	Municipal	Q,M,B
394201091091201	Kinderhook #1	Municipal	Q,M,B
394201091091202	Kinderhook #2	Municipal	Q,M,B
394220091123301	Hull #1	Municipal	Q,M,B
394220091123302	Hull #3	Municipal	L,Q,M,B
	PULASKI COUNTY		
371737088584501	Karnak #2	Municipal	Q,M,B
	PUTNAM COUNTY		
411040089124301	McNabb #2	Municipal	Q,M,B
411503089203201	Hennepin #4	Municipal	L,Q,M,B
411512089203701	Hennepin PWD #3	Municipal	L,Q,M,B
411551089201701	Hennepin PWD #5	Municipal	L,Q,M,B
	ROCK ISLAND COUNTY		
411949090402801	Reynolds #2	Municipal	Q,M,B
412009090402301	Reynolds #1	Municipal	Q,M,B
412421090334401	Milan #5	Municipal	Q,M,B
412555090265401	Coal Valley #3	Municipal	Q,M,B
412600090273901	Coal Valley #2	Municipal	Q,M,B
413038090241001	Silvis #8	Municipal	Q,M,B
413039090241701	Silvis #7	Municipal	Q,M,B
413042090243401	Silvis #3	Municipal	Q,M,B
413042090243901	Silvis #4	Municipal	Q,M,B
413048090250301	Silvis #5	Municipal	Q,M,B
413447090204401	Rapid City #1	Municipal	Q,M,B
413448090204301	Rapid City #2	Municipal	Q,M,B
413614090194801	Port Byron #3	Municipal	Q,M,B
413627090194801	Port Byron #2	Municipal	Q,M,B
414045090193001	Cordova #1	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	SANGAMON COUNTY		
394528089234201	Mechanicsburg-Buffalo Water Comm. #2	Municipal	Q,M,B
394749089171501	Borden Chemical Co. #12	Private	Q,M,B
394757089161101	Borden Chemical Co. #15	Private	Q,M,B
394805089162601	Borden Chemical Co. #14	Private	Q,M,B
394805089165701	Borden Chemical Co. #11	Private	Q,M,B
394810089294201	Dawson #2	Municipal	Q,M,B
394810089294501	Dawson #1	Municipal	Q,M,B
394815089164501	Borden Chemical Co. #10	Private	Q,M,B
394815089294401	Dawson #3	Municipal	Q,M,B
394816089161601	Borden Chemical Co. #13	Private	Q,M,B
394821089162501	Borden Chemical Co. #9	Private	Q,M,B
394907089323401	River Oaks Village Mobile Home Park #2	Private	Q,M,B
394926089321301	Riverton #2	Municipal	Q,M,B
394932089321201	Riverton #4	Municipal	Q,M,B
395116089433201	Curran Gardner PWD #1	Municipal	Q,M,B
395451089450801	Pleasant Plains #4	Municipal	Q,M,B
395451089451101	Pleasant Plains #3	Municipal	Q,M,B
	SCOTT COUNTY		
393652090274001	Winchester #7	Municipal	Q,M,B
393700090274501	Winchester #10	Municipal	Q,M,B
393703090274501	Winchester #8	Municipal	Q,M,B
394212090344901	South Jacksonville #2	Municipal	L,Q,M,B
394213090345501	South Jacksonville #1	Municipal	L,Q,M,B
394509090323401	Bluffs #4	Municipal	Q,M,B
394511090323601	Bluffs #3	Municipal	Q,M,B
	SHELBY COUNTY		
391533088370001	Stewardson #1	Municipal	Q,M,B
392058088501901	Shelbyville #6	Municipal	Q,M,B
392104088501601	Shelbyville #4	Municipal	L,Q,M,B
392233088500201	Shelbyville #1	Municipal	Q,M,B
392234088500201	Shelbyville #2	Municipal	L,Q,M,B
392637088375601	Windsor #7	Municipal	Q,M,B
392641088375401	Windsor #5	Municipal	Q,M,B
393105088450601	Findlay #1	Municipal	L,Q,M,B
393108088450401	Findlay #2	Municipal	Q,M,B
393919089011901	Moweaqua #16	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	SHELBY COUNTY--Continued		
394034089040201	Moweaqua #18	Municipal	Q,M,B
394034089040601	Moweaqua #19	Municipal	Q,M,B
	ST. CLAIR COUNTY		
382240089474001	Fayetteville #1	Municipal	L,Q,M,B
382241089474001	Fayetteville #2	Municipal	L,Q,M,B
382251089440901	St. Libory #1	Municipal	Q,M,B
383342089513501	Spring Valley Mobile Home Park #4	Private	Q,M,B
383342089513801	Parkview Mobile Home Park #1	Private	Q,M,B
383915090024701	Mound PWD #3	Municipal	Q,M,B
	STEPHENSON COUNTY		
421556089494501	Pearl City #4	Municipal	Q,M,B
421602089493201	Pearl City #3	Municipal	L,Q,M,B
421813089373601	Freeport #3	Municipal	L,Q,M,B
421813089373901	Freeport #4	Municipal	Q,M,B
421814089374801	Freeport #2	Municipal	Q,M,B
421825089374401	Freeport #6	Municipal	Q,M,B
421826089374301	Freeport #7	Municipal	Q,M,B
421826089374401	Freeport #5	Municipal	L,Q,M,B
421839089313601	River Road Mobile Home Park #1	Private	Q,M,B
421839089313602	River Road Mobile Home Park #2	Private	Q,M,B
422236089380501	Cedarville #1	Municipal	Q,M,B
422238089492001	Lena #3	Municipal	L,Q,M,B
422249089494001	Lena #2	Municipal	L,Q,M,B
	TAZEWELL COUNTY		
402024089184601	Armington #1	Municipal	L,Q,M,B
402517089244901	Hopedale #4	Municipal	L,Q,M,B
402519089244301	Hopedale #5	Municipal	Q,M,B
403124089290101	Tremont #7	Municipal	Q,M,B
403159089221701	Mackinaw #5	Municipal	L,Q,M,B
403159089221801	Mackinaw #4	Municipal	L,Q,M,B
403159089221802	Mackinaw #3	Municipal	L,Q,M,B
403327089392001	Illinois American Water Co. #7	Private	L,Q,M,B
403402089390101	Illinois American Water Co. #1	Private	L,Q,M,B
403402089390102	Illinois American Water Co. #3	Private	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	TAZEWELL COUNTY--Continued		
403404089390701	Illinois American Water Co. #2	Private	L,Q,M,B
403432089380901	Illinois American Water Co. #5	Private	L,Q,M,B
403432089380902	Illinois American Water Co. #6	Private	L,Q,M,B
403553089381501	Illinois American Water Co. #8	Private	L,Q,M,B
403623089282301	Morton #8	Municipal	Q,M,B
403624089281601	Morton #6	Municipal	L,Q,M,B
403626089282201	Morton #9	Municipal	Q,M,B
403628089281801	Morton #7	Municipal	L,Q,M,B
403630089282101	Morton #10	Municipal	Q,M,B
403639089371801	North Pekin #2	Municipal	Q,M,B
403640089274901	Morton #3	Municipal	L,Q,M,B
403641089275101	Morton #4	Municipal	L,Q,M,B
403651089243301	Mayfair Subdivision #1	Municipal	Q,M,B
403737089195201	Deer Creek #4	Municipal	Q,M,B
403737089195401	Deer Creek #3	Municipal	Q,M,B
404219089243501	Washington #8	Municipal	Q,M,B
404222089242701	Washington #6	Municipal	L,Q,M,B
	UNION COUNTY		
372237089231201	Union County Conservation Area #7	Municipal	Q,M,B
372516089222401	Union County Conservation Area #8	Municipal	Q,M,B
372519089222701	Union County Conservation Area #3	Municipal	Q,M,B
372545089212901	Anna-Jonesboro Water Commission #4	Municipal	Q,M,B
372548089213001	Anna-Jonesboro Water Commission #2	Municipal	Q,M,B
	VERMILION COUNTY		
395253087390601	Ridge Farm #3	Municipal	L,Q,M,B
395336087385601	Ridge Farm #2	Municipal	Q,M,B
395336087385701	Ridge Farm #1	Municipal	Q,M,B
395355087480401	Sidell #5	Municipal	Q,M,B
395411087485701	Sidell #3	Municipal	Q,M,B
400245087494301	Fairmount #3	Municipal	L,Q,M,B
401554087362201	Bismarck #2	Municipal	Q,M,B
401554087362401	Bismarck #1	Municipal	Q,M,B
401824087480001	Potomac #5	Municipal	Q,M,B
401826087480101	Potomac #4	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	VERMILION COUNTY--Continued		
402758087403501	Hoopeston #6	Municipal	Q,M,B
402801087403401	Hoopeston #5	Municipal	L,Q,M,B
402801087403701	Hoopeston #4	Municipal	L,Q,M,B
402804087480701	East Lynn Community Water System #1	Municipal	Q,M,B
	WARREN COUNTY		
404353090404101	Roseville #9	Municipal	Q,M,B
405213090452401	Kirkwood #4	Municipal	Q,M,B
405213090452402	Kirkwood #5	Municipal	Q,M,B
405415090383601	Monmouth #8	Municipal	Q,M,B
405427090385501	Monmouth #4	Municipal	Q,M,B
405427090385801	Monmouth #5	Municipal	Q,M,B
405511090383401	Monmouth #6	Municipal	Q,M,B
405518090390001	Monmouth #7	Municipal	Q,M,B
410039090450101	Little York #3	Municipal	Q,M,B
	WASHINGTON COUNTY		
382800089325001	Okawville #1	Municipal	Q,M,B
382803089325201	Okawville #4	Municipal	Q,M,B
	WHITE COUNTY		
375756088080801	Norris City #2	Municipal	Q,M,B
380549088042101	Carmi #3	Municipal	Q,M,B
380549088042501	Carmi #1	Municipal	L,Q,M,B
381222088215501	Mill Shoals #4	Municipal	Q,M,B
	WHITESIDE COUNTY		
413920090044401	Erie #1	Municipal	Q,M,B
413922090044101	Erie #2	Municipal	Q,M,B
414305089550901	Lyndon #1	Municipal	Q,M,B
414307089551201	Lyndon #2	Municipal	L,Q,M,B
414617090141501	Albany #2	Municipal	L,Q,M,B
414617090141601	Albany #1	Municipal	L,Q,M,B
414709090130901	Albany #3	Municipal	L,Q,M,B
414740089401801	N. Ill. Water Corp. - Sterling #1	Private	Q,M,B
414743089401501	N. Ill. Water Corp. - Sterling #2	Private	Q,M,B
414804089440301	N. Ill. Water Corp. - Sterling #6	Private	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	WILL COUNTY		
412854087503501	Frankfort #5	Municipal	L,Q,M,B
412909087590301	New Lenox #5	Municipal	L,Q,M,B
412955087481001	Prestwick Utility Co. #1	Private	Q,M,B
413001087582001	New Lenox #2	Municipal	L,Q,M,B
413001087582002	New Lenox #3	Municipal	L,Q,M,B
413053087580201	New Lenox #4	Municipal	L,Q,M,B
413054087580201	New Lenox #6	Municipal	L,Q,M,B
413117087481701	Frankfort Square #1	Municipal	Q,M,B
413118087481601	Frankfort Square #2	Municipal	Q,M,B
413556088020101	Bonnie Brae Forest Manor Sanitary District #1	Municipal	Q,M,B
414126088054601	Citizens West Subdivision Sugarbrook #9	Municipal	L,Q,M,B
414151088060601	Citizens West Subdivision Cinnamon #10	Municipal	L,Q,M,B
414154088030101	Citizens West Subdivision Colonial #2	Municipal	L,Q,M,B
414154088050201	Citizens West Subdivision Indian Oaks #6	Municipal	L,Q,M,B
414210088054401	Citizens West Subdivision #11	Municipal	L,Q,M,B
	WINNEBAGO COUNTY		
421023089035701	Morristown Mobile Home Park #2	Municipal	Q,M,B
421025089033001	Morristown Mobile Home Park #1	Municipal	Q,M,B
421103089095101	Timberlane Moblie Home park #1	Municipal	Q,M,B
421111089094601	Harrington Bros. Subdivision #1	Municipal	Q,M,B
421116089053901	Rockford Water Dept. #24	Municipal	Q,M,B
421212089062501	Rockford Water Dept. #28	Municipal	Q,M,B
421233089020601	Rockford Water Dept. #36	Municipal	L,Q,M,B
421239089060301	Gem Suburban #4	Municipal	Q,M,B
421241089062801	Gem Suburban #1	Municipal	Q,M,B
421246089040201	Bill Mar Heights #3	Municipal	Q,M,B
421246089053201	Rockford Water Dept. #19	Municipal	L,Q,M,B
421248089060901	Gem Suburban #3	Municipal	Q,M,B
421248089062801	Gem Suburban #2	Municipal	Q,M,B
421252089041601	Bill Mar Heights #2	Municipal	Q,M,B
421256088593801	Coventry Creek Subdivision #2	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	WINNEBAGO COUNTY--Continued		
421256088594001	Coventry Creek Subdivision #1	Municipal	Q,M,B
421256089010901	Great Oaks & Beacon Hills Apts. #2	Private	Q,M,B
421256089011601	Great Oaks & Beacon Hills Apts. #1	Private	Q,M,B
421326089042801	American Mobile Home Park #1	Private	Q,M,B
421352089043201	Rockford Water Dept. #35	Municipal	Q,M,B
421353088594601	Coventry Hills East Subdivision #1	Municipal	Q,M,B
421413089063801	Ann's Mobile Home Park #1	Private	Q,M,B
421414089035101	Barret's Mobile Home Park #1	Private	Q,M,B
421414089035401	Barret's Mobile Home Park #2	Private	Q,M,B
421416089001401	Holiday Acres Subdivision #1	Municipal	Q,M,B
421419089014301	Rockford Water Dept. #16	Municipal	L,Q,M,B
421420089070101	Clark's Mobile Home Park #1	Private	Q,M,B
421421088592401	Wildwood Utility Co. #1	Private	Q,M,B
421424089065801	Balcitis Pump Corp. #1	Private	Q,M,B
421427089063301	G & F Apts. #1 (2,800 Apartments)	Private	Q,M,B
421432089070301	Balcitis Pump Corp. #2	Private	Q,M,B
421434089063501	Riverview Mobile Home Park #1	Private	Q,M,B
421440089062901	Riverview Mobile Home Park #2	Private	Q,M,B
421440089063301	Riverview Mobile Home Park #3	Private	Q,M,B
421445089062801	Neartown Mobile Home Park #1	Private	Q,M,B
421454089042301	Rockford Water Dept. #7A	Municipal	L,Q,M,B
421455089032601	Rockford #6	Municipal	L,Q,M,B
421503088580701	Cherry View Apts. #1	Private	Q,M,B
421503088580901	Connor Apts. #1	Private	Q,M,B
421503089003401	Newburg Landowners Assoc. #2	Private	Q,M,B
421505089003401	Newburg Landowners Assoc. #1	Private	Q,M,B
421506088580701	Cherry Vale East Apts. #7620	Private	Q,M,B
421507088580601	Cherry Vale East Apts. #7632	Private	Q,M,B
421507089062601	Rockford Water Dept. #4	Municipal	L,Q,M,B
421508088580801	Cherry Vale East Apts. #7640	Private	Q,M,B
421511089013101	Rockford Water Dept. #10	Municipal	L,Q,M,B
421520089051001	Rockford Water Dept. #38	Municipal	L,Q,M,B
421535089050301	Rockford Water Dept. #11	Municipal	L,Q,M,B
421557089003501	Rockford Water Dept. #26	Municipal	L,Q,M,B
421559089142401	Winnebago #2	Municipal	L,Q,M,B
421611089031101	Rockford Water Dept. #9A	Municipal	L,Q,M,B
421611089031102	Rockford Water Dept. #9	Municipal	L,Q,M,B
421613088580301	Woodland Mobile Home Park #1	Private	Q,M,B
421613089062801	Rockford Water Dept. GW#2	Municipal	L,Q,M,B
421614089045001	Rockford Water Dept. #12	Municipal	L,Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	WINNEBAGO COUNTY--Continued		
421617089063501	Rockford Water Dept. GW#5	Municipal	Q,M,B
421618089063201	Rockford Water Dept. GW#1	Municipal	Q,M,B
421621089141601	Winnebago #3	Municipal	L,Q,M,B
421625089063401	Rockford Water Dept. GW#6	Municipal	Q,M,B
421628089080001	Rockford Water Dept. #15	Municipal	L,Q,M,B
421636089013101	Rockford Water Dept. #13	Municipal	L,Q,M,B
421636089090201	Rockford Water Dept. #21	Municipal	L,Q,M,B
421656089031101	Rockford Water Dept. #5	Municipal	Q,M,B
421656089031301	Rockford Water Dept. #5A (32)	Municipal	L,Q,M,B
421657089000901	Rockford Water Dept. #27	Municipal	L,Q,M,B
421711089061101	Rockford Water Dept. #33	Municipal	L,Q,M,B
421713089211501	Six Oaks Mobile Home Park #1	Private	Q,M,B
421716089082601	Rockford Water Dept. #22	Municipal	L,Q,M,B
421718089043401	Rockford Water Dept. #8	Municipal	Q,M,B
421719089041201	Rockford Water Dept. #8A	Municipal	Q,M,B
421725088581501	Rockford Water Dept. #31	Municipal	L,Q,M,B
421734089020001	Rockford Water Dept. #701	Municipal	L,Q,M,B
421736089015901	Rockford Water Dept. #17	Municipal	L,Q,M,B
421740089024901	Bradley Heights #3	Municipal	Q,M,B
421750089001601	Rockford Water Dept. #25	Municipal	L,Q,M,B
421801089065901	Rockford Water Dept. #20	Municipal	L,Q,M,B
421830089012701	Rockford Water Dept. #29	Municipal	L,Q,M,B
421832089213301	Pecatonica #1	Municipal	L,Q,M,B
421834089213501	Pecatonica #2	Municipal	L,Q,M,B
421837089025701	Loves Park #1	Municipal	L,Q,M,B
421850089025501	Loves Park #2	Municipal	L,Q,M,B
421855088591601	Rockford Water Dept. #30	Municipal	L,Q,M,B
421937089001701	Loves Park #4	Municipal	L,Q,M,B
421956089034301	Rockford Water Dept. #23	Municipal	L,Q,M,B
422020088592401	Loves Park #3	Municipal	L,Q,M,B
422033089033201	North Park Public Water Dist. #2	Municipal	L,Q,M,B
422048089025901	North Park Public Water Dist. #4	Municipal	L,Q,M,B
422102089023901	North Park Public Water Dist. #3	Municipal	L,Q,M,B
422123089023301	Rainbow Lane Mobile Home Park #1	Private	Q,M,B
422245089012901	North Park Public Water Dist. #5	Municipal	L,Q,M,B
422256089035201	Leanna Lakeside Subdivision #1	Municipal	Q,M,B
422257089015801	Phil Aire Estates #2	Private	Q,M,B
422303089011701	Bel Rock Mobile Home Park #3	Private	Q,M,B
422552089011701	Hononegah Country Estates #1	Municipal	Q,M,B
422552089011801	Hononegah Country Estates #2	Municipal	Q,M,B

Table 3.--Ground-Water Stations--Continued

Station No.	Local Well No.	Ownership	Type of data
	WINNEBAGO COUNTY--Continued		
422608089202901	Durand #2	Municipal	Q,M,B
422609089194801	Durand #3	Municipal	L,Q,M,B
422629089044001	Rockton #6	Municipal	L,Q,M,B
422642089225301	Otter Creek Utility District #1	Municipal	L,Q,M,B
422659088573201	Legend Lakes Water Assoc. #1	Municipal	L,Q,M,B
422718089022801	Goldie B. Floberg Center #1	Private	Q,M,B
422719089022801	Goldie B. Floberg Center #2	Private	Q,M,B
422723089034001	Rockton #5	Municipal	Q,M,B
422723089250701	Otter Creek Utility District #2	Private	L,Q,M,B
	WOODFORD COUNTY		
403743089165001	Goodfield West Well #2	Municipal	Q,M,B
403745089163601	Goodfield East Well #1	Municipal	L,Q,M,B
404418089011801	El Paso #2	Municipal	Q,M,B
404418089011802	El Paso #1	Municipal	Q,M,B
404429089080601	Secor #2	Municipal	Q,M,B
404429089080602	Secor #3	Municipal	Q,M,B
404544089282101	Caterpillar Trails PWD #1	Municipal	L,Q,M,B
404545089282201	Caterpillar Trails PWD #2	Municipal	Q,M,B
404706089240301	Metamora #6	Municipal	L,Q,M,B
404739089114901	Roanoke #5	Municipal	Q,M,B
404739089115101	Roanoke #3	Municipal	Q,M,B
404753089212201	Metamora #5	Municipal	L,Q,M,B
404831089261101	Oak Ridge Sanitary District #2	Municipal	Q,M,B
404832089285301	Cedar Hills Homeowners Assn. #1	Private	Q,M,B
405056089070501	Benson #5	Municipal	Q,M,B
405103089072401	Benson #4	Municipal	Q,M,B
405513089073001	Washburn #1	Municipal	Q,M,B
405513089073002	Washburn #2	Municipal	Q,M,B

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