

WATER-RESOURCES ACTIVITIES

IN ILLINOIS, 1987

Compiled by Mary L. Garrelts

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U.S. GEOLOGICAL SURVEY

Open-File Report 87-698

Urbana, Illinois

1988

DEPARTMENT OF THE INTERIOR  
DONALD PAUL HODEL, Secretary

U.S. GEOLOGICAL SURVEY  
Dallas L. Peck, Director

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For additional information  
write to:

District Chief  
U.S. Geological Survey  
Water Resources Division  
102 E. Main St., 4th Floor  
Urbana, IL 61801

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Federal Center  
Box 25425  
Denver, CO 80225

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## WATER-RESOURCES ACTIVITIES IN ILLINOIS, 1987

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 research and fact-finding 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.
- Administering the provisions of the Water Resources Research Act of 1984, which include the State Water Resources Research Institutes and the Research Grants and Contracts Programs.

- Supporting the provisions of the National Environmental Policy Act of 1969 and managing the Geological Survey conduct of natural resources survey in response to the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund Act) of 1980.

## ILLINOIS DISTRICT

### Organization

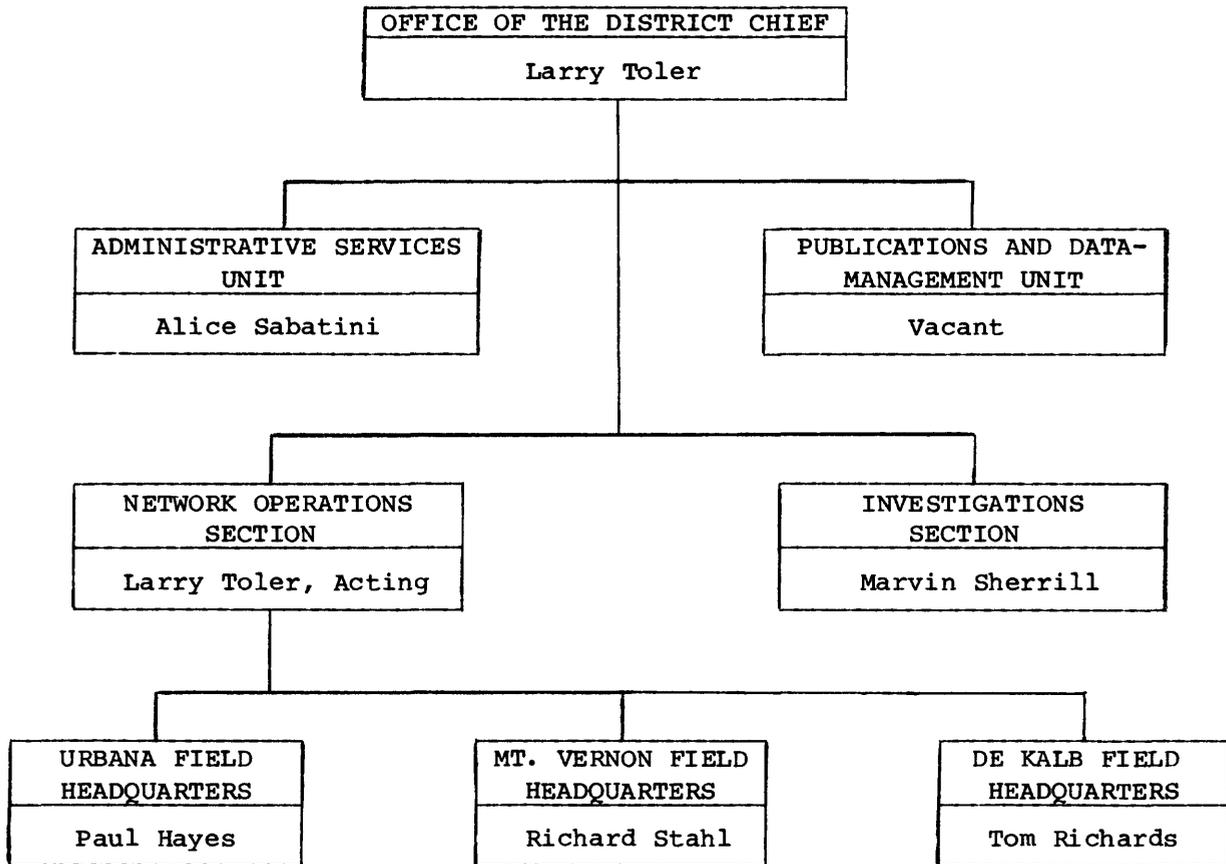
The Illinois District of the U.S. Geological Survey, Water Resources Division, consists of two operating sections, two support units, and three field offices (fig. 1). Personnel are based at the District office and at Field Headquarters in Urbana, Mt. Vernon, and De Kalb. The District operates with guidance 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 including, 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, State, 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 the use of 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.



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

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

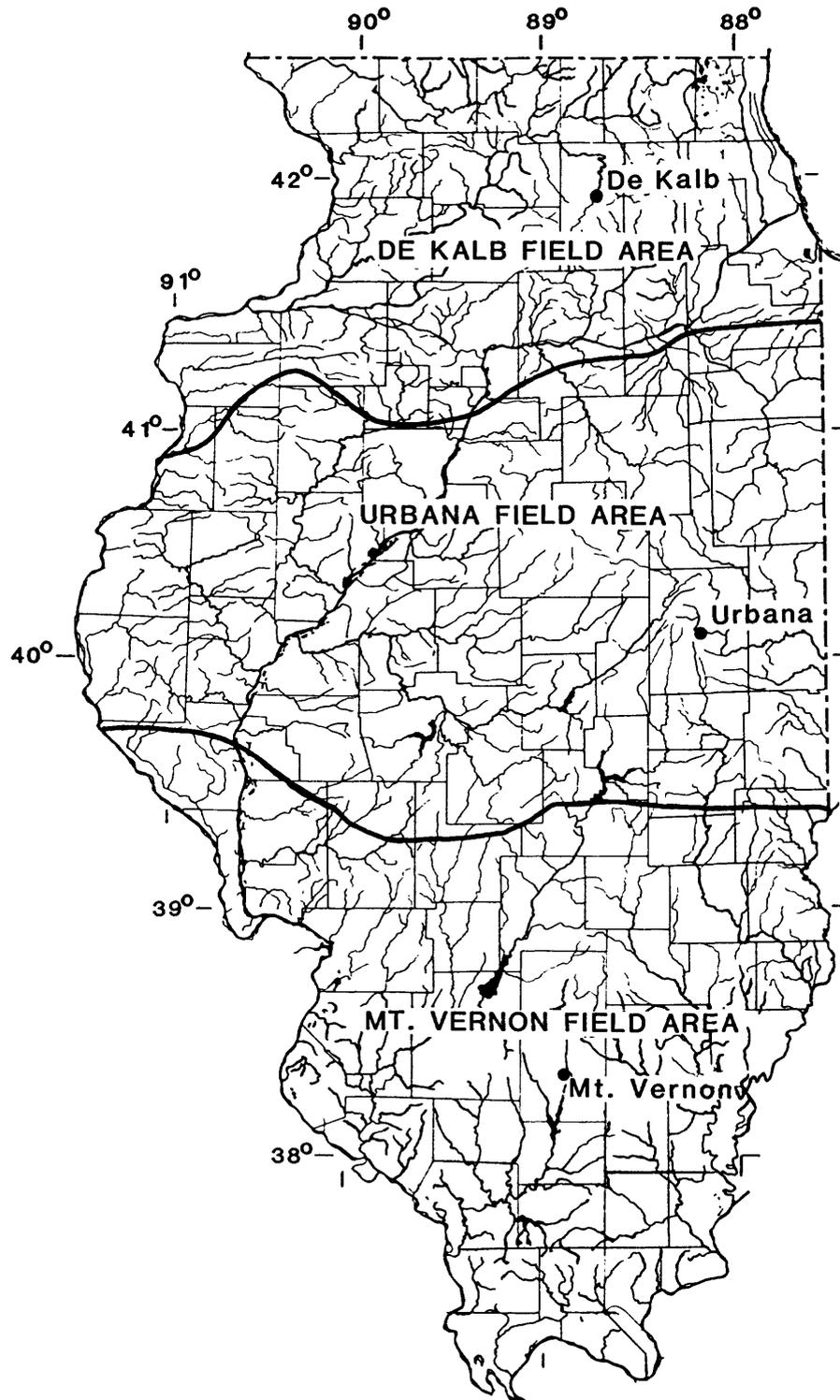


Figure 2.--Field headquarter areas of responsibility.

## Publications and Data-Management Unit

This support unit provides data processing services; maintains computer manuals and program catalogs, does computer programming, and assists hydrologists in program selection, application, and modification. The Unit assembles reports for review, prepares camera-ready copy for publication, and maintains the District's data files, library, and warehouse.

## Administrative-Services Unit

The Administrative-Services Unit is responsible for the 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 and 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 1987 are listed in table 1.

### 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.

Table 1.--Agencies supporting water-resources activities  
during fiscal year 1987

State Agencies

Illinois Department of Transportation  
Division of Water Resources

Illinois Environmental 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

Forest Preserve District of Du Page County

Du Page County Public Works

The Metropolitan Sanitary District of Greater Chicago

City of Springfield

City of Decatur

City of De Kalb

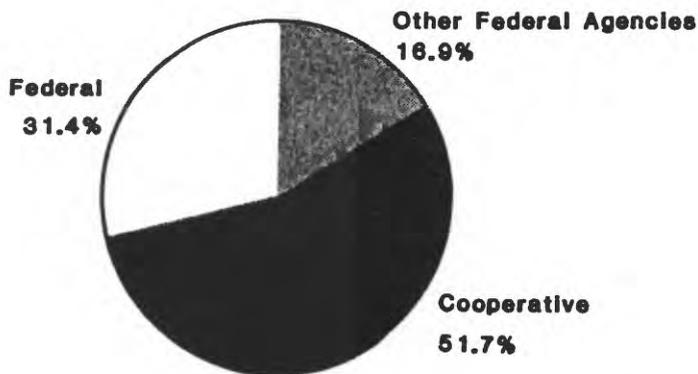
Federal Agencies

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

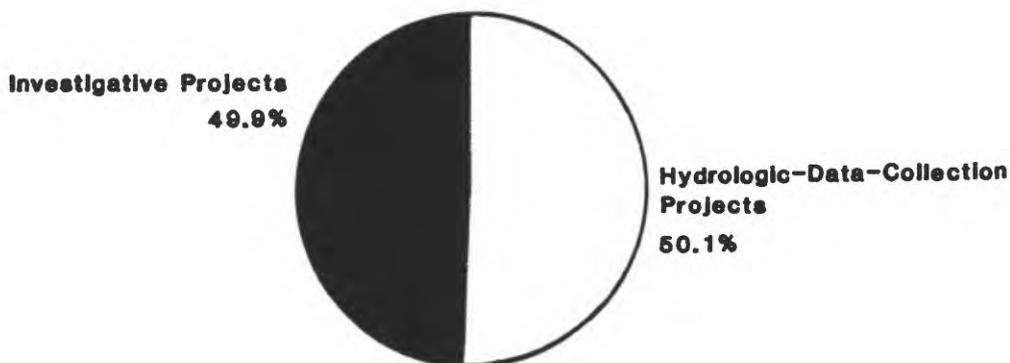
Department of Housing and Urban Development  
Federal Emergency Management Agency

Environmental Protection Agency

Funding from all sources in fiscal year 1987 amounted to about \$3,400,000 which was distributed as follows:



The diagram below shows the percentage of the activities for fiscal year 1987 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 shallow alluvium-filled valleys that were eroded into the bedrock by ancestral streams.

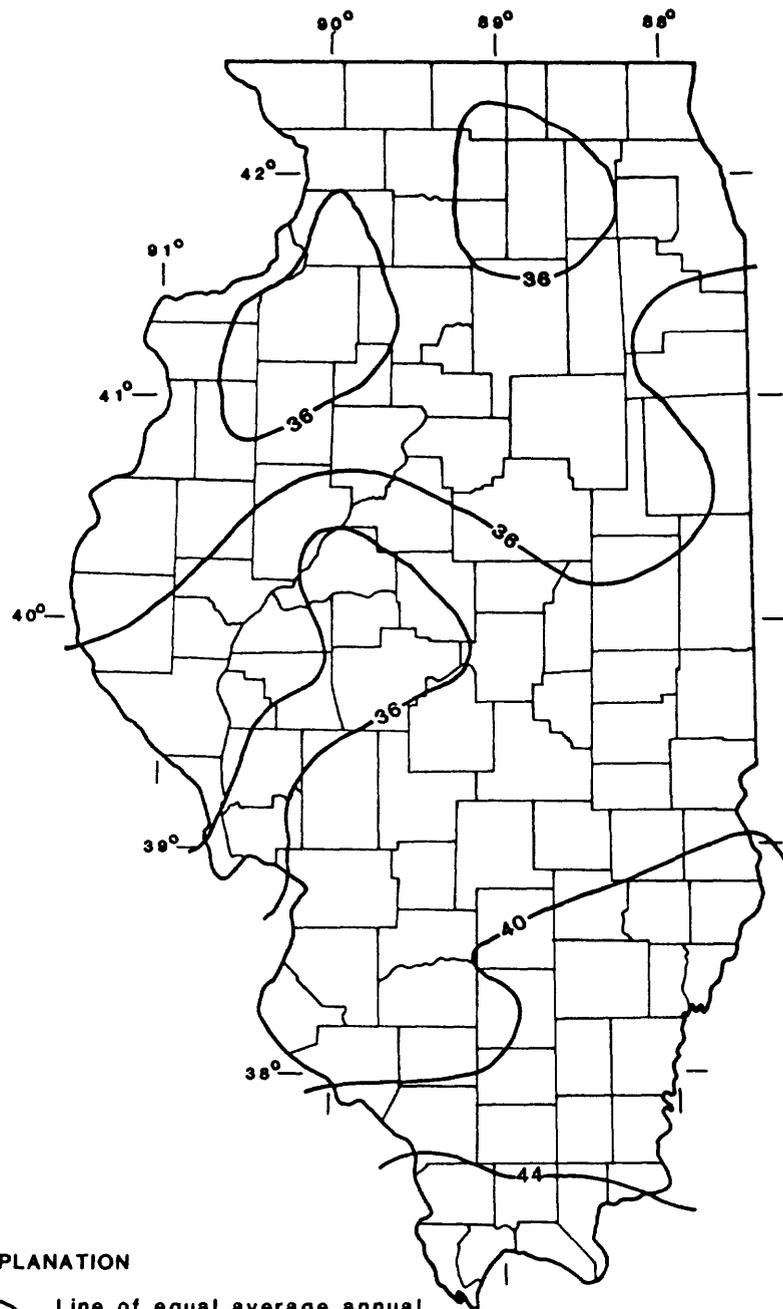


Figure 3.--Average annual precipitation in Illinois, 1951-80 (from unpublished map compiled by D. A. Olson, National Oceanic and Atmospheric Administration).

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 meet these needs.

## WATER-RESOURCES-DATA STATIONS

### Surface Water

#### Discharge and Stage Stations

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:

<u>Station classification</u>	<u>Number of stations</u>
Stream stations.....	167
Continuous record:	
Discharge.....	134
Discharge for 7 months only.....	4
Stage only.....	5
Partial record:	
Peak (maximum) flow only.....	24
Lake and reservoir stations.....	8
Stage and contents.....	3
Stage only.....	5
	175
Total.....	175

The locations of sites where streamflow or stage are collected are shown in figure 4, and the types of data collected are shown in table 2. Average runoff for the 1951-80 period is shown in figure 5.

#### Water-Quality Stations

Data collected from 206 water-quality sampling stations, operated jointly by the U.S. Geological Survey and the IEPA (Illinois Environmental Protection Agency) during fiscal year 1987 are shown in figure 6 and are listed in table 2.

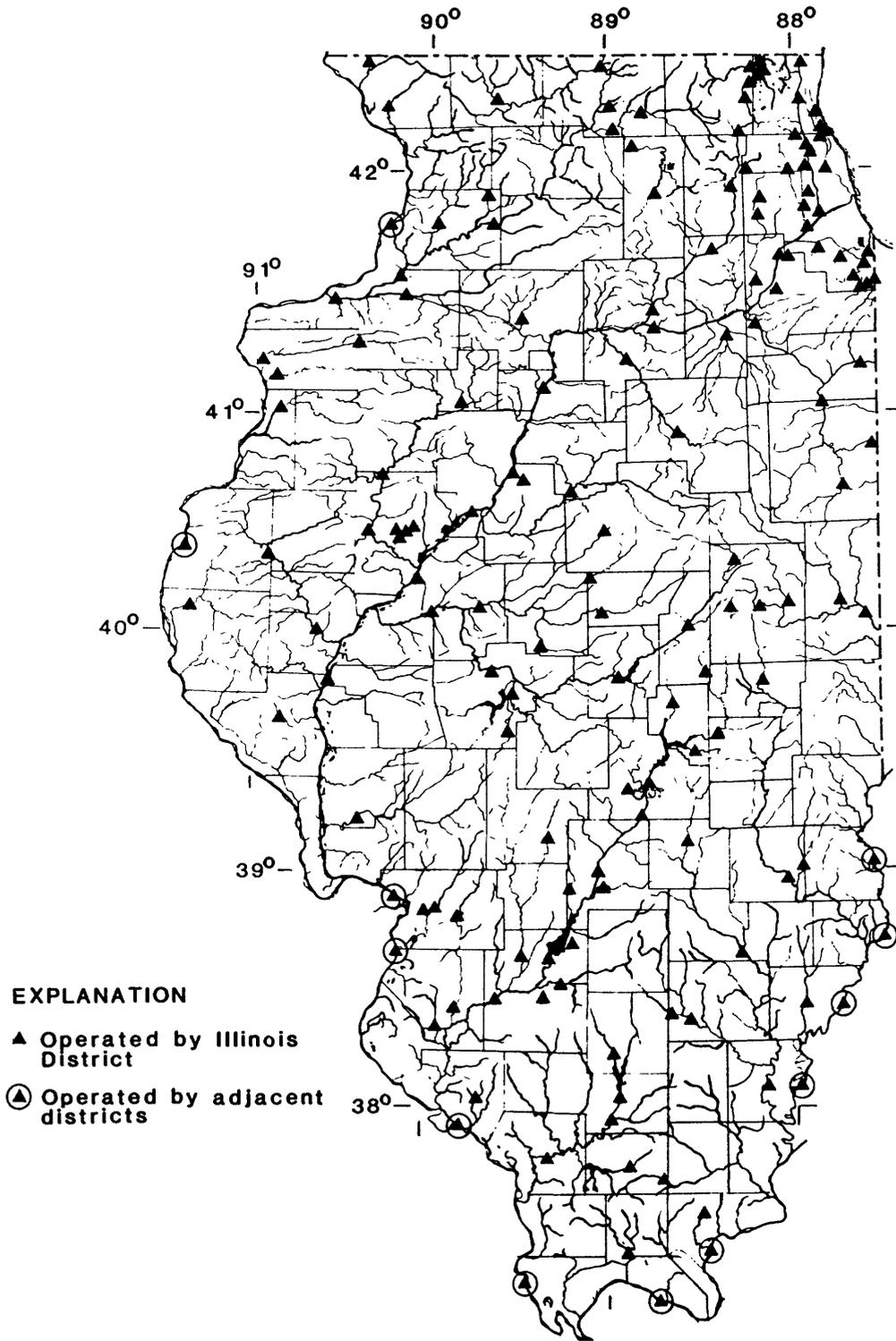


Figure 4.--Surface-water stations.

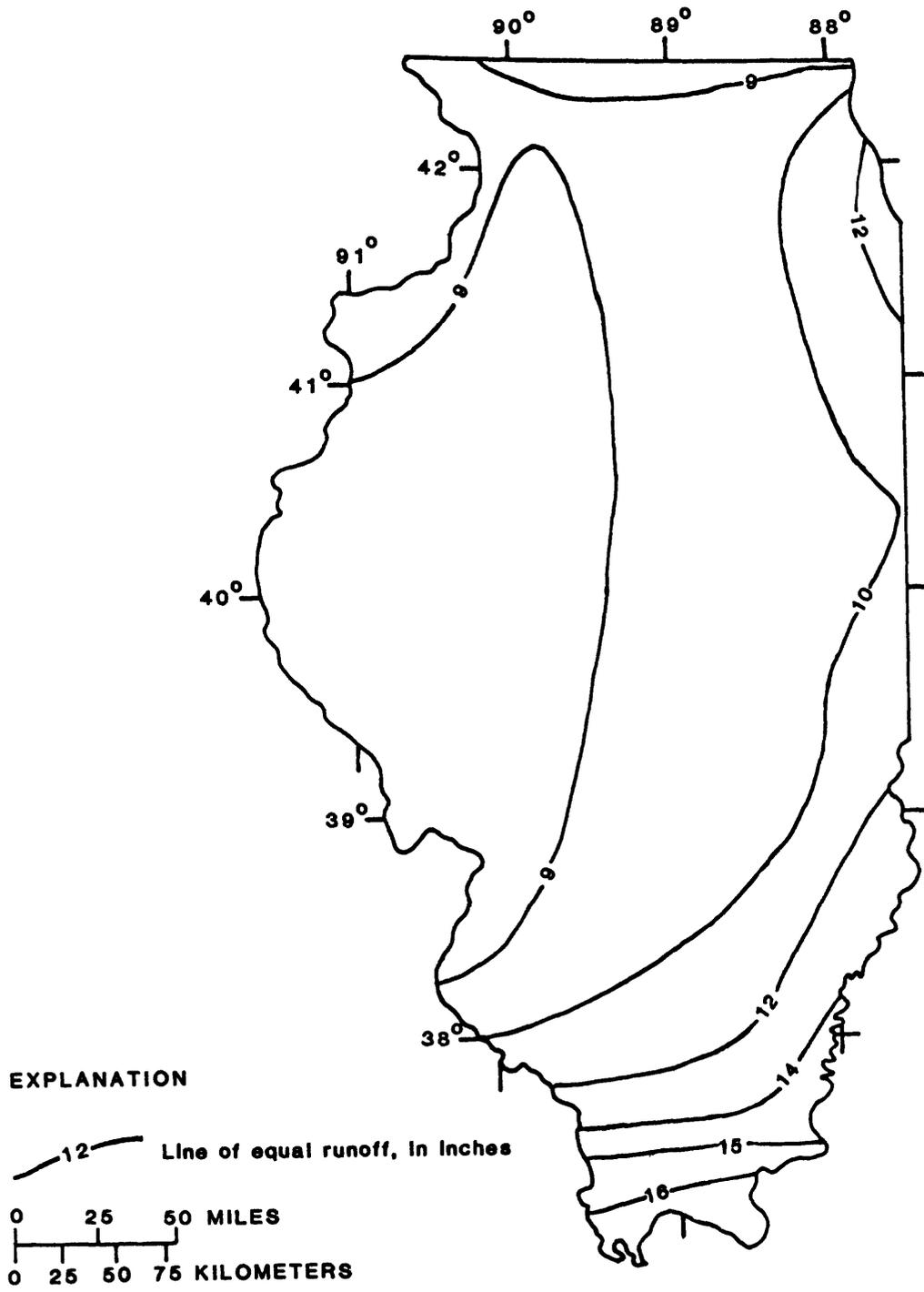
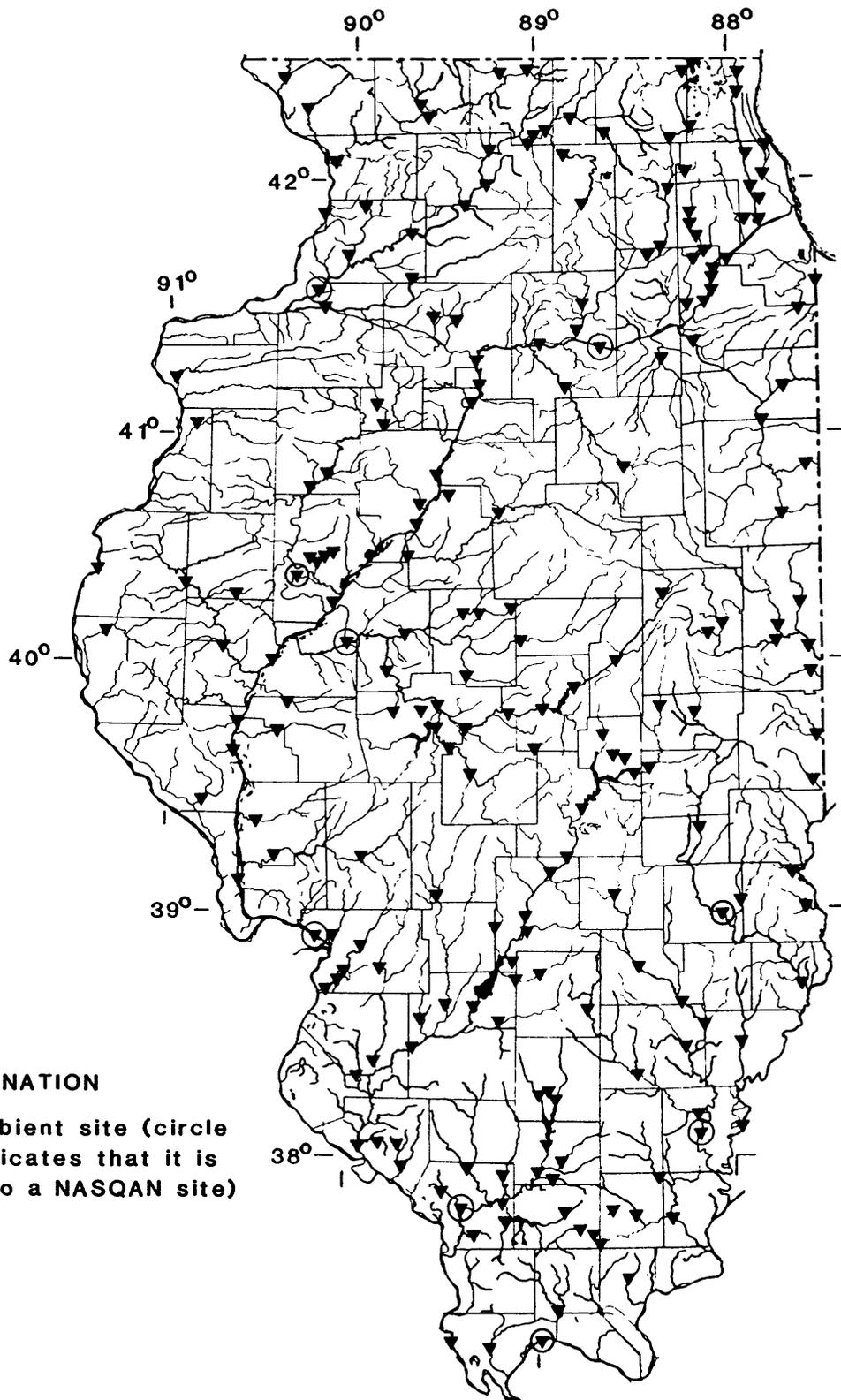


Figure 5.--Average annual runoff, in inches, 1951-80 (from Gebert, Graczyk, and Krug, 1985).



**EXPLANATION**

- ▼ Ambient site (circle indicates that it is also a NASQAN site)

Figure 6.--Water-quality stations.

The 206-station network includes three stations operated in cooperation with the Metropolitan Sanitary District of Greater Chicago and 9 stations operated as part of the Survey's NASQAN (National Stream Quality Accounting Network) program. Two of these stations are operated by States adjacent to Illinois. Daily or near-daily sediment samples were collected and daily sediment records are computed at five stations.

<u>Data classification</u>	<u>Number of stations</u>
Physical data:	
Water temperature.....	206
Specific conductance.....	206
pH.....	206
Dissolved oxygen.....	206
Sediment data.....	5
Chemical data:	
Inorganic constituents.....	205
Organic constituents.....	206
Microbiological data.....	205

#### 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, 851 in number, are known as project wells and are used for specific studies. Among these are 827 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:

<u>Data type</u>	<u>Number of wells</u>
Water levels.....	119
Physical data:	
Water temperature.....	647
Specific conductance.....	429
pH.....	548
Chemical data:	
Inorganic constituents.....	827
Organic constituents.....	827

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 7.

#### 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 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 operated and maintained on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Va., and on PRIME 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 U.S. 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

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DESCRIPTIONS OF PROJECTS IN 1987

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## 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 report 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 of surface water information was done for 134 continuous-record stations, 24 partial-record stations, 12 stage only stations, and 6 miscellaneous measurement stations. Record flood measurements were made on several streams in northeastern Illinois for the August flood. Installed CR-10 data loggers with telephone modems at 10 continuous-record stations in northeastern Illinois.

Records for 1985 and 1986 water years for the Lake Michigan diversion-accounting acoustical-velocity-meter (AVM) station on the Chicago Sanitary and Ship Canal at Romeoville were analyzed and periods of missing or poor record were revised by relating periods of good record to records at the downstream lock and dam at Lockport. The AVM was recalibrated and is performing satisfactorily at this time.

\*\*\* PLANS NEXT YEAR \*\*\* Continue surface-water data collection with modifications to the network. Install acoustical velocity meter at Illinois River at Valley City. Install CR-10 data loggers with telephone modems at 12 continuous-record stations located primarily in the northern part of the State. Five abandoned concrete gage houses will be removed under a direct-services agreement with the Illinois Division of Water Resources.



\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

\*\*\* FIELD LOCATION \*\*\* Illinois Statewide

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

\*\*\* 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  
Forest Preserve District of Du Page County  
City of Springfield  
City of Decatur  
U.S. Army Corps of Engineers  
Rock Island District  
St. Louis District  
Louisville District  
Chicago District

\*\*\* REPORT IN PROCESS \*\*\*

Experience with acoustical velocity meter at Chicago Sanitary and Ship Canal at Romeoville, Illinois

\*\*\* PUBLISHED REPORTS \*\*\*

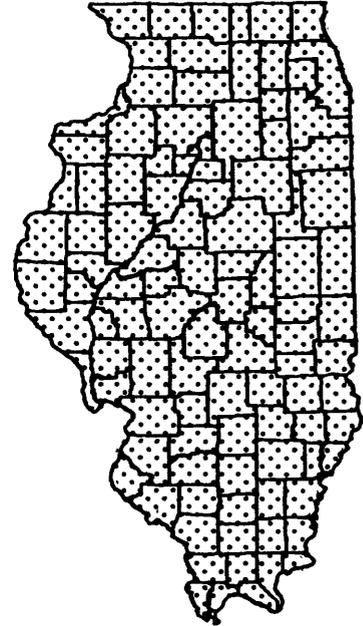
Stahl, R. L., Fitzgerald, K. K., Richards, T. E., and Hayes, P. D., 1987, Water resources data--Illinois, water year 1986, Volume 1. Illinois except Illinois River basin: U.S. Geological Survey Water-Data Report IL-86-1, 482 p.

Fitzgerald, K. K., Hayes, P. D., Richards, T. E., and Stahl, R. L., 1987, Water resources data--Illinois, water year 1986, Volume 2. Illinois River basin: U.S. Geological Survey Water-Data Report IL-86-2, 415 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

\*\*\* PUBLISHED REPORTS \*\*\*

Fitzgerald, K. K., Hayes, P. D., Richards, T. E., and Stahl, R. L., 1987, Water resources data--Illinois, water year 1986, Volume 2. Illinois River basin: U.S. Geological Survey Water-Data Report IL-86-2, 415 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 \*\*\* Data collection will be discontinued at 49 stations where discharge ratings are not maintained. Continue data collection and quality assurance activities at 156 stations.

\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

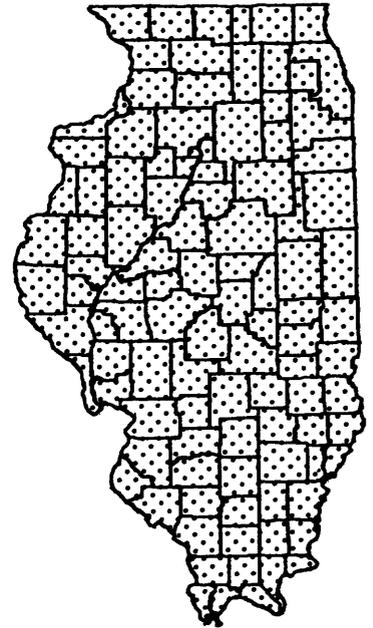
\*\*\* FIELD LOCATION \*\*\* Illinois Statewide

\*\*\* 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



\*\*\* PUBLISHED REPORTS \*\*\*

Stahl, R. L., Fitzgerald, K. K., Richards, T. E., and Hayes, P. D., 1987, Water resources data--Illinois, water year 1986, Volume 1. Illinois except Illinois River basin: U.S. Geological Survey Water-Data Report IL-86-1, 482 p.

Fitzgerald, K. K., Hayes, P. D., Richards, T. E., and Stahl, R. L., 1987, Water resources data--Illinois, water year 1986, Volume 2. Illinois River basin: U.S. Geological Survey Water-Data Report IL-86-2, 415 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 five sites.

\*\*\* PLANS NEXT YEAR \*\*\* Prepare and publish the 1987 water year suspended-sediment data. Collect and analyze samples and compute suspended-sediment discharge record for four 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

\*\*\* PUBLISHED REPORTS \*\*\*

Stahl, R. L., Fitzgerald, K. K., Richards, T. E., and Hayes, P. D., 1987, Water resources data--Illinois, water year 1986, Volume 1. Illinois except Illinois River basin: U.S. Geological Survey Water-Data Report IL-86-1, 482 p.

Fitzgerald, K. K., Hayes, P. D., Richards, T. E., and Stahl, R. L., 1987, Water resources data--Illinois, water year 1986, Volume 2. Illinois River basin: U.S. Geological Survey Water-Data Report IL-86-2, 415 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 PRIME 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 PRIME. (2) The data will be entered into a data base on the PRIME. (3) The data will be made available to users throughout the Nation.

\*\*\* APPROACH \*\*\* Each quarter, the National Atmospheric Deposition Program at Colorado State University will put new and updated data on a magnetic tape and send it to the Illinois District. The data will be reformatted and entered into a data base on the District's PRIME minicomputer. This data base interfaces with National Water Information System (NWIS) and is available to outside users.

\*\*\* SUMMARY OF RESULTS \*\*\* A computer program was written to reformat data received from the National Atmospheric Deposition Program (NADP) at Colorado State University so that the data can be entered into a data base on the Illinois District PRIME minicomputer. Data for the period July 1978 through January 1987 have been entered into the data base.

\*\*\* PLANS FOR NEXT YEAR \*\*\* Data will be obtained quarterly from the NADP at Colorado State University and will be entered into a data base on the Illinois District PRIME minicomputer.

\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

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

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

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

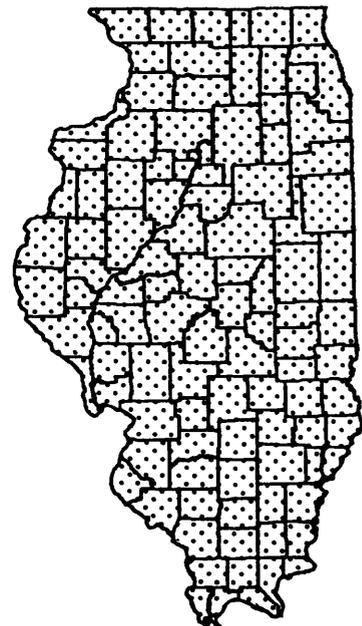
#### IL006 FLOOD INVESTIGATIONS

\*\*\* 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 \*\*\* Flood insurance studies (FIS) using limited detail methods were completed for the city of Wenona, city of Morrison, village of Arthur, city of Monticello, village of Muddy, village of Dowell, village of Pearl City, village of Hanover, and city of Herrin.

\*\*\* 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

#### IL007 WATER USE

\*\*\* PROJECT TITLE \*\*\* Water Use

\*\*\* 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 management 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-data 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. To establish methods of estimating water use.

\*\*\* APPROACH \*\*\* Responsibilities will be divided between the Illinois State Water Survey (ISWS), Illinois Environmental Protection Agency (IEPA), and the U.S. Geological Survey (USGS). The ISWS will collect water-use withdrawal



and delivery 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 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 collect, classify, aggregate, and prepare water-use return data for entry in State files and into NWUDS. This will be accomplished by compiling and manipulating data received from IEPA's National Pollution Discharge Elimination System (NPDES) data files. The USGS will coordinate with the ISWS and the IEPA in the collection of water-use data and maintain standards of data collection that will meet the National needs.

\*\*\* SUMMARY OF RESULTS \*\*\* Methods for estimating deliveries, releases, consumption, losses, and gains based on water-use data were developed for Kankakee and Rockford, Illinois, and may be used to estimate water uses for other cities in Illinois. Several coefficients for estimating domestic deliveries were similar among six communities. Discharge measurements made at several industrial sites demonstrated varying reliability of industrial-release data. However, other measurements showed sewage treatment return data are reliable. In cooperation with the ISWS, the Illinois water-consumption, delivery, return, and withdrawal data for 1985 were entered into the NWUDS--presently EUOWITUS (Estimated Use of Water in the United States). The 1986 water-withdrawal and delivery data were collected by the ISWS. In cooperation with the IEPA, the 1986 sewage-treatment and industrial-return data for Illinois have been collected and entered into computer files. A water-use summary report was prepared for the National Water Summary Water-Supply Paper.

\*\*\* PLANS NEXT YEAR \*\*\* Get reports approved. Enter 1986 water-consumption, delivery, and withdrawal data into NWUDS. Enter 1986 and 1987 water-return data into NWUDS and into the State Water Use Data System (SWUDS).

\*\*\* 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

\*\*\* REPORT IN PROCESS \*\*\*

Water Use in Kankakee and Rockford, Illinois, in 1984

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 decaport 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.

\*\*\* 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  
October 1987 to March 1988

\*\*\* PLANNED REPORT \*\*\*

Runoff, Sediment Transport, and Landform Modifications at Sheffield, Illinois

\*\*\* PUBLISHED ABSTRACTS \*\*\*

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.

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.

\*\*\* PUBLISHED REPORTS \*\*\*

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.

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.

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.

\*\*\* 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 \*\*\* Gravity lysimeters installed in an unsaturated sand unit beneath two disposal trenches revealed several isolated zones of saturated flow. Flow was continuous throughout the year, contrary to data from earlier years that indicated recharge to the saturated zone was seasonally timed, occurring primarily in the spring. Additionally, data collected elsewhere in the subtrench sand and till deposits indicated that during years with reduced precipitation, infiltrating water goes into unsaturated-zone storage, rather than recharging the saturated zone. The increased contact time of the soil water with the wastes should result in inflated leachate concentrations when the soil water migrates from the trenches in subsequent wetter years.

\*\*\* PLANS NEXT YEAR \*\*\* Estimate annual evapotranspiration from meteorologic and moisture-probe data; estimate annual water budget. Model water movement around tunnel to determine tunnel influence on local flow patterns. Evaluate water movement and water quality data and begin preparation of 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 \*\*\*

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

\*\*\* PUBLISHED ABSTRACTS \*\*\*

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.

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

\*\*\* PUBLISHED REPORTS \*\*\*

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-8308105, p. 669-673.

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.

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.

Water and tritium movement in variably saturated glacial deposits near Sheffield, Illinois, by P. C. Mills and R. W. Healy, in Proceedings of the FOCUS Conference on Midwestern Ground Water Issues, April 21-23, 1987, Indianapolis, Indiana, p. 169-186.

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 Investigations Report 86-4228, 37 p.

Healy, R. W., deVries, M. P., and Sturrock, A. M., Jr., 1987, Evapotranspiration and microclimate at a low-level radioactive-waste disposal site in north-western Illinois: U.S. Geological Survey Open-File Report 86-301, 88 p.

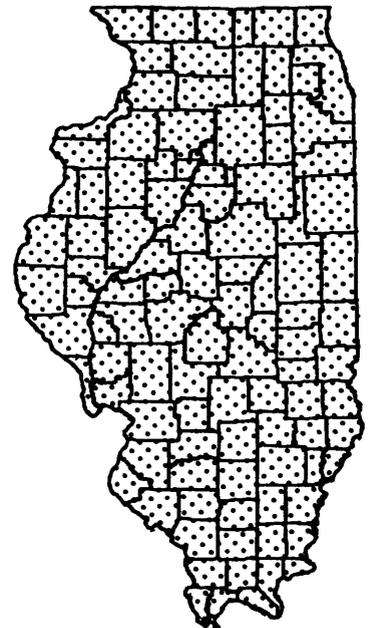
#### IL062 GROUND-WATER WATER-QUALITY NETWORK

\*\*\* 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, analyze changes observed during first 3 years and determine long-term network sampling plans.



\*\*\* SUMMARY OF RESULTS \*\*\* A total of 2,080 public water-supply wells in Illinois have been sampled for metals, nutrients, general constituents, and volatile organic compounds. Of those, 330 wells were sampled for pesticides and herbicides.

\*\*\* PLANS NEXT YEAR \*\*\* Complete and publish reports.

\*\*\* 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 \*\*\*

Observation of Ground-Water Levels and Quality in Illinois

\*\*\* REPORT IN PROCESS \*\*\*

Water-quality data for the observation-well network in Illinois, 1985-87

\*\*\* PUBLISHED REPORT \*\*\*

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.

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  $^{14}\text{C}$  in the Unsaturated Zone at a Low-Level Radioactive-Waste Disposal 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  $^{14}\text{CO}_2$  transport may be inhibited relative to  $\text{CO}_2$  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  $^{14}\text{CO}_2$  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  $^{14}\text{C}$  exchange capacity for geologic deposits collected from the site will be tested by batch experiments.

\*\*\* SUMMARY OF RESULTS \*\*\* Laboratory experiments of  $^{14}\text{C}$  exchange have been completed and sorption isotherms have been determined. Effective diffusivities for the lithologic units adjacent to the site have been determined, and transport of methane and  $^{14}\text{CO}_2$  modeled. Transport is significantly affected by sorption exchange and the nature of the atmosphere-soil boundary.

\*\*\* PLANS NEXT YEAR \*\*\* Complete analysis of data and publish reports.

\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

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

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



\*\*\* PERIOD OF PROJECT \*\*\* October 1983 to March 1988

\*\*\* PLANNED REPORTS \*\*\*

Distribution of Gases in the Unsaturated Zone at Low-Level Radioactive-Waste Site near Sheffield, Illinois

A Numerical Solution for the Diffusion Equation in Hydrogeologic Systems

\*\*\* PUBLISHED ABSTRACTS \*\*\*

Transport of methane in the unsaturated zone by Robert G. Striegl and Audrey L. Ishii, in Ground Water, v. 25, no. 5, September-October 1987, p. 611.

Diffusion of radioactive carbon dioxide in the unsaturated zone near buried low-level radioactive waste, by Robert G. Striegl, in Ground Water, v. 25, no. 5, September-October 1987, p. 613.

Methane diffusion in the unsaturated zone near buried low-level radioactive waste, by Robert Striegl and Audrey Ishii, in EOS Transactions, American Geophysical Union, v. 68, no. 16, April 21, 1987, p. 318.

\*\*\* PUBLISHED REPORTS \*\*\*

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 84-09115, p. 579-587.

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.

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 \*\*\* All field work and lab analyses have been completed, including well installation, borehole geophysics, aquifer and tracer tests, and core porosity and permeability. Final analyses of all the data are nearly complete. Two conference papers were published and several journal papers are in draft stages or in review. Tracer test results do not conform to predictions using the advection-dispersion equation. A stochastic model is proposed.

\*\*\* PLANS NEXT YEAR \*\*\* Hydraulic and tracer tests will be conducted and analyzed using a discrete approach. Complete data analysis and papers currently in progress. Relate findings and conclusions to historical tritium concentration data.

\*\*\* 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

\*\*\* PUBLISHED ABSTRACT \*\*\*

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 Annual Midwest Ground Water Conference, October 27-29, 1986, Little Rock, Arkansas.

Hydraulic characteristics of a jointed dolomite beneath a low-level radioactive-waste disposal site, by J. R. Nicholas and A. M. Shapiro, in EOS Transactions, American Geophysical Union, v. 67, no. 16, April 22, 1986, p.

\*\*\* PUBLISHED REPORTS \*\*\*

Estimating fracture connectivity using measurements of borehole temperatures during pumping, by S. E. Silliman, J. R. Nicholas, and A. M. Shapiro, in Proceedings of the FOCUS Conference on Midwestern Ground Water Issues, April 21-23, 1987, Indianapolis, Indiana, p. 231-248.

IL070 CEDAR CREEK WATER-QUALITY ASSESSMENT

\*\*\* PROJECT TITLE \*\*\*

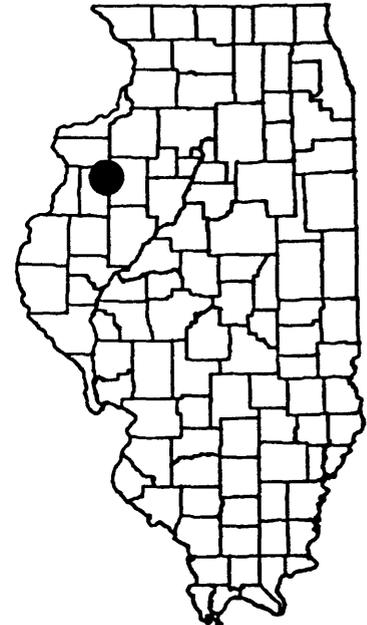
Cedar Creek Water-Quality Assessment; Impact of Storm Runoff and Combined-Sewer Overflows from Galesburg, Illinois

\*\*\* 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 \*\*\* Low-flow modeling indicated that sediment-oxygen demands were the primary cause of low dissolved oxygen concentrations in Cedar Creek. Pollutant loads contributed by combined sewers were significant but were only a fraction of the storm-related loads discharged to the creek. Storm sewers did, however, appear to be a major source of degradable organic wastes. When considering the amount of agricultural land in the basin, it is apparent that agricultural runoff is a major source of pollutants to the creek; however, the locations of high sediment-oxygen demands and high constituent concentrations indicate that storm-related discharges from the city of Galesburg are the primary cause of water-quality degradation in Cedar Creek.

\*\*\* PLANS NEXT YEAR \*\*\* Complete reports and submit for approval.

\*\*\* 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 Processes Affecting Low-Flow Water Quality  
Characteristics of Storm Runoff and Effect on Cedar Creek

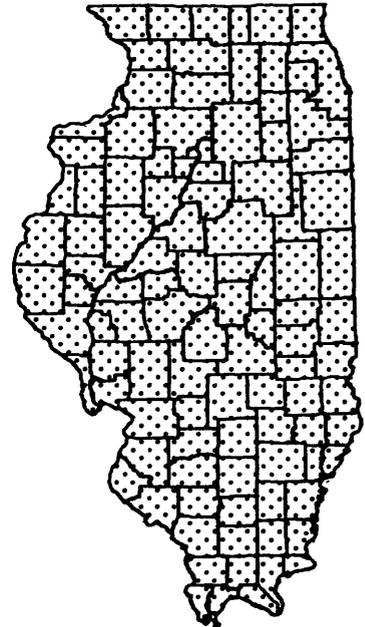
\*\*\* PUBLISHED REPORT \*\*\*

McFarlane, R. D., Freeman, W. O., and Schmidt, A. R., Data-collection methods and data summary for the assessment of water quality in Cedar Creek, west-central Illinois: U.S. Geological Survey Open-File Report 87-543, 177 p.

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. Twenty-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 \*\*\* Equations, applicable statewide, were developed for estimating flood-peak discharges at recurrence intervals ranging from 2 to 500 years for nonregulated rural streams in Illinois, with drainage areas ranging from 0.02 to 10,000 square miles. Multiple-regression analyses, using basin characteristics and peak streamflow data from 268 gaged sites in Illinois, Indiana, and Wisconsin showed that the most significant independent variables for estimating flood-peak discharges are drainage area, slope, rainfall intensity, and a regional factor. Examples are given in the report to show a step-by-step procedure in calculating a 50-year flood for a site on an ungaged stream and on a gaged stream.

\*\*\* 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

\*\*\* PUBLISHED REPORT \*\*\*

Curtis, G. W., 1987, Technique for estimating flood-peak discharges and frequencies on rural streams in Illinois: U.S. Geological Survey Water-Resources Investigations Report 87-4207, 79 p.

#### 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 stormflow 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 ability 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 \*\*\* Data collection was continued throughout the year. Stage-discharge relations were established and confirmed by current-meter measurements. High-flow measurements made during the flood of August 1987 helped establish the upper end of the stage-discharge relations. Record for the 1986 water year was published in the annual water-data report. Rainfall-runoff modeling using HSPF (Hydrological Simulation Program--FORTRAN) was initiated. Preliminary calibrations and sensitivity analyses were performed.

\*\*\* PLANS NEXT YEAR \*\*\* The rainfall-runoff model will be calibrated for each watershed, and the goodness-of-fit will be tested. A report will be prepared.

\*\*\* 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

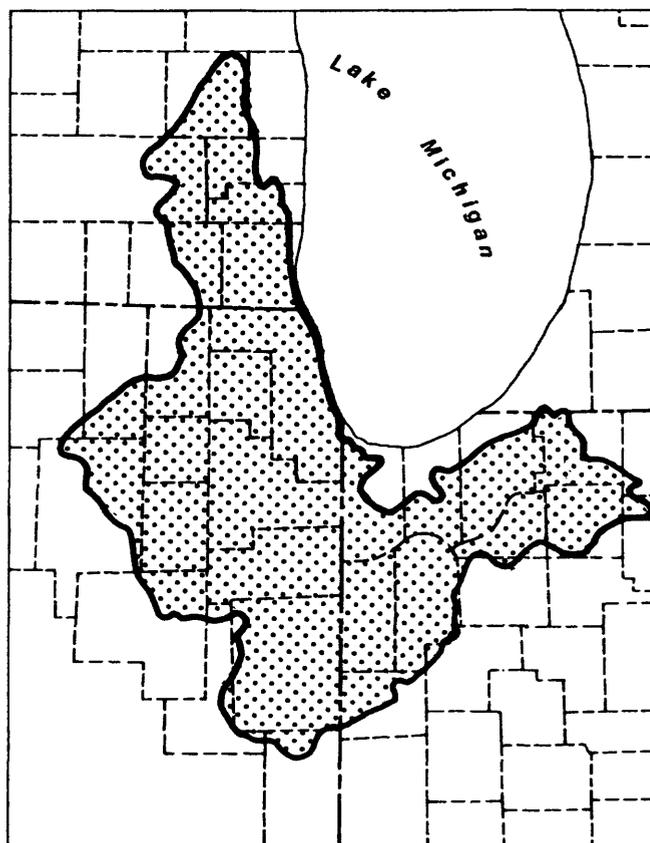
\*\*\* PLANNED REPORT \*\*\*

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 \*\*\* Protection of 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 \*\*\* An open-file report that describes the National Water Quality Assessment program and project area was written and approved. A draft work plan describing the design of major project work elements, field protocols, quality-assurance procedures, and time lines was written. The fixed-station sampling work element was begun in April at eight stations in cooperation with the Illinois Environmental Protection Agency. Samples of water and suspended sediment were collected and analyzed for inorganic constituents on a monthly frequency and during a record flood in August. Three 36-hour studies and 16 cross-section surveys were performed to document time variability and mixing characteristics. Two basin-wide synoptic surveys were partially completed before being postponed because of the August flood. First, dissolved oxygen, nutrient, and chlorophyll concentrations were measured at 27 sites in the Kankakee River basin. Second, field teams from the Geologic and Water Resources Divisions collected about 400 bottom-material samples for analyses of trace elements. Water-quality data collected from 1978-86 at 38 stations were analyzed, and frequency distributions and concentration-discharge relations were developed. Historic bottom-material chemistry data were retrieved from STORET and plotted on maps of the basin. An extensive literature review identified about 130 reports from past field studies that describe biological conditions as a measure of water quality. Digital (Geographic Information System) coverages of basin hydrography and political boundaries were prepared. Project's Liaison Committee met twice to discuss project documents, plans, and coordination.

\*\*\* PLANS NEXT YEAR \*\*\* Continue fixed-station sampling and cross-section surveys. Continue to compile and statistically summarize existing water-quality information. Write draft report that describes results of analysis of existing information. Complete the synoptic surveys of minimum dissolved oxygen conditions, nutrients, and trace elements in bottom material. Perform a synoptic survey of E. Coli bacteria. Identify manmade organic compounds that will be targeted for study, revise work plan to include a detailed description for studies of these compounds, and perform reconnaissance surveys to document their existence in the basin. Continue to meet with the project Liaison Committee.

\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

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

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

\*\*\* PERIOD OF PROJECT \*\*\* April 1986 to September 1990

\*\*\* PLANNED REPORTS \*\*\*

Water-quality conditions based on analysis of existing information

\*\*\* PUBLISHED ABSTRACT \*\*\*

Methods for selecting bottom-material sampling sites in the upper Illinois River basin, by Paul J. Terrio, in Program and Abstracts, Illinois State Section of the American Water Resources Association, 1987 Annual Conference, April 28-29, 1987, Champaign, Illinois, p. 32.

\*\*\* PUBLISHED REPORT \*\*\*

Mades, Dean M., 1987, Surface-water-quality assessment of the upper Illinois River basin in Illinois, Indiana, and Wisconsin: Project description: U.S. Geological Survey Open-File Report 87-473, 39 p.

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 \*\*\* A meeting was held of all principal investigators to finalize the annotated outline and submit first drafts of each investigator's chapter. The first drafts were compiled by the editor and forwarded to principal investigators for their review. The U.S. Geological Survey 1986 Yearbook containing article "Low-Level Radionuclide Transport - A Case Study" was sent to the printers.

\*\*\* PLANS NEXT YEAR \*\*\* Obtain formal colleague reviews and submit comprehensive report to Region and Headquarters for approval.

\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

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

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

\*\*\* PERIOD OF PROJECT \*\*\* April 1986 to September 1988

\*\*\* PLANNED REPORTS \*\*\*

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



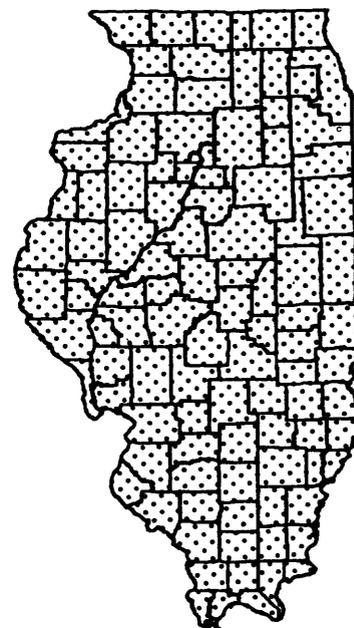
\*\*\* PUBLISHED ABSTRACT \*\*\*

Lessons learned from research at a low-level radioactive-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.

IL077 DESCRIPTION AND RESPONSE OF FLOODS

\*\*\* PROJECT TITLE \*\*\* Description and Hydrologic Response Simulation of Floods in Illinois

\*\*\* PROBLEM \*\*\* State and local water-resource planners frequently use certain large storms (storms that resulted in floods of 50- to 100-year recurrence intervals) for design and evaluation purposes. Coupled with available climatologic and hydrologic data associated with these storms, the HEC-1 flood-hydrograph model is often used to predict drainage-basin response to large storms. A detailed description of characteristics and response of large storms is a necessary prerequisite for their application in planning purposes. In addition, it is necessary to determine the applicability of the HEC-1 model and associated parameter-estimating techniques (developed using storms of much smaller magnitude and frequency) to large storms.



\*\*\* OBJECTIVES \*\*\* Describe the climatologic and hydrologic characteristics associated with the two large storms that resulted in floods of 50- to 100-year recurrence intervals in Illinois. Determine the applicability of rainfall-loss and unit-hydrograph parameter-estimating techniques developed using storms of small recurrence intervals to these large storms.

\*\*\* APPROACH \*\*\* Description of up to three large storms and resulting floods. Areal extent of storm mapped and gaging stations identified. Climatological conditions and hydrologic data described. HEC-1 model and previously developed parameter-estimating techniques will be used to simulate the discharge hydrograph for each storm in drainage basins from previous studies that are in the path of the storms. Peak discharge converted to peak stage.

\*\*\* SUMMARY OF RESULTS \*\*\* June 1981 and December 1982 storms and resulting floods have been identified and data collected. Climatological and hydrologic data have been collected. HEC-1 has been used to simulate discharge hydrographs for each storm at drainage basins from previous studies that are in the path of storms.

\*\*\* PLANS NEXT YEAR \*\*\* Analyze data collected and incorporate into report.

\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

\*\*\* FIELD LOCATION \*\*\* Illinois Statewide

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

\*\*\* PERIOD OF PROJECT \*\*\* October 1986 to September 1988

\*\*\* COOPERATOR \*\*\*

Illinois Department of Transportation, Division of Water Resources

\*\*\* PLANNED REPORTS \*\*\*

Description and Hydrologic Response Simulation of Floods in Illinois

#### ILO78 ILLINOIS RAINFALL-RUNOFF WITH GIS

\*\*\* PROJECT TITLE \*\*\* Unit-Hydrograph and Rainfall-Loss Parameter Estimation Using Basin and Soil Characteristics

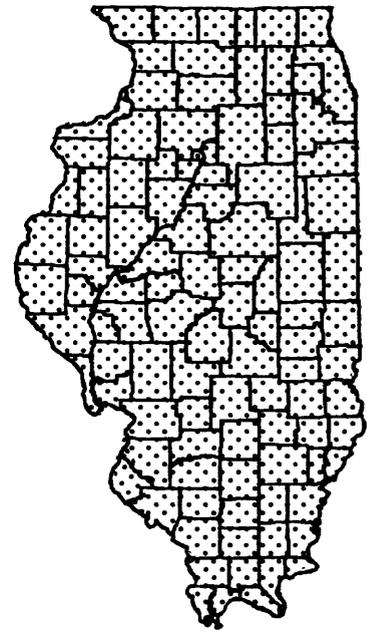
\*\*\* PROBLEM \*\*\* Estimates of unit-hydrograph and rainfall-loss function parameters are required when the HEC-1 flood-hydrograph model is used for computing discharge hydrographs. There is a need to examine basin and soil characteristics other than those available in WATSTORE (National Water Data Storage and Retrieval System) in relation to the unit-hydrograph and rainfall-loss function parameters in the development of estimating techniques. Geographic Information System (GIS) procedures could be used to relate basin and soil characteristics to the basin-averaged unit-hydrograph and rainfall-loss function parameters.

\*\*\* OBJECTIVE \*\*\* To develop estimating techniques for the basin-average unit-hydrograph and rainfall-loss function parameters by relating these parameters to basin and soil characteristics.

\*\*\* APPROACH \*\*\* Data collection and analysis: Digitize drainage area maps, compute basin and soil characteristics data available in GIS (data not available in local GIS will be digitized and computed).

Development of parameter-estimating techniques: Relate unit-hydrograph and rainfall-loss parameters to basin and soil characteristics using statistical methods.

Evaluation of parameter-estimating techniques: Hydrograph characteristics evaluated for 36 independent uncalibrated gaged basins.



\*\*\* SUMMARY OF RESULTS \*\*\* ARC/INFO program was installed. Data base development is underway. Have digitized drainage divides of about one-third of maps necessary for drainage basins. Have obtained statewide land-use digital data.

\*\*\* PLANS NEXT YEAR \*\*\* Data collection and analysis: Digitize drainage divides and use MAPJOIN program to obtain drainage basins, obtain soils data, and overlay drainage basins with soils characteristics data.

Development of parameter-estimating techniques: Relate unit-hydrographs and rainfall-loss parameters to basin and soil characteristics using statistical methods.

\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

\*\*\* FIELD LOCATION \*\*\* Illinois Statewide

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

\*\*\* PERIOD OF PROJECT \*\*\* October 1986 to September 1989

\*\*\* COOPERATOR \*\*\*

Illinois Department of Transportation, Division of Water Resources

\*\*\* PLANNED REPORTS \*\*\*

Techniques to Estimate Unit-Hydrograph and Rainfall-Loss Parameters

#### IL080 USEPA PROJECTS

\*\*\* PROJECT TITLE \*\*\* USGS/USEPA Interagency Agreement Projects

\*\*\* PROBLEM \*\*\* The U.S. Environmental Protection Agency (USEPA), Region V, has requested that the U.S. Geological Survey (USGS), Illinois District, provide technical assistance on several Superfund sites within the State. The technical assistance for the 1987 fiscal year varies from designing and conducting aquifer tests in fractured rock to reviewing technical reports submitted to USEPA by their consultants.

\*\*\* OBJECTIVE \*\*\* To provide technical consultation, training, and quality assurance and to conduct research for the USEPA under the conditions of the joint interagency agreement.

\*\*\* APPROACH \*\*\* For fiscal year 1987, design, conduct, and analyze an aquifer test that will take place adjacent to the Byron Johnson



Salvage Yard Superfund site. Additional work consists of reviewing technical reports and providing technical oversight for all field work conducted at the Acme Solvents and Pagel's Pit Superfund sites.

\*\*\* SUMMARY OF RESULTS \*\*\* Acme Solvents, Pagel's Pit, and Byron/Johnson Salvage Yard Superfund sites were visited. Health surveillance programs were initiated for field personnel. Geophysical logging, step-drawdown tests, and aquifer tests were completed at Byron/Johnson Salvage Yard. Technical reviews of the Acme Solvents and Pagel's Pit work plans were submitted to USEPA. Another USGS/USEPA Interagency Agreement was initiated for H.O.D. Landfill in Antioch, Illinois.

\*\*\* PLANS NEXT YEAR \*\*\* Oversee all field activities at the Acme Solvents and Pagel's Pit Superfund sites. Begin work on H.O.D. Landfill, Antioch, Illinois, overseeing aquifer test conducted by consultants and independently analyzing the data. Complete final report for the Byron/Johnson Salvage Yard Superfund site.

\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

\*\*\* FIELD LOCATION \*\*\* Illinois Statewide

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

\*\*\* PERIOD OF PROJECT \*\*\* March 1986 to September 1988

\*\*\* COOPERATOR \*\*\*

U.S. Environmental Protection Agency, Region V

\*\*\* PLANNED REPORTS \*\*\*

Hydrogeology and aquifer testing at the Byron/Johnson Salvage Yard Superfund site near Byron, Illinois

\*\*\* PUBLISHED ABSTRACT \*\*\*

Hydraulic testing in two aquifers at a superfund site near Byron, Illinois, by B. J. Ryan, R. T. Kay, and K. A. Wallace, in Program with Abstracts, 32nd Annual Midwest Ground Water Conference, October 28-30, 1987, Madison, Wisconsin.

\*\*\* PUBLISHED REPORT \*\*\*

Hydrogeology of the Byron/Johnson Salvage Yard Superfund site near Byron, Illinois, by R. T. Kay, B. J. Ryan, E. J. Mears, and D. J. Yeskis, in Proceedings of the ASCE Water Resources Symposium, October 21-22, 1987, Rosemont, Illinois

IL081 GREAT LAKES

\*\*\* PROJECT TITLE \*\*\* Great Lakes Basin Ground-Water Contamination

\*\*\* PROBLEM \*\*\* The Great Lakes and their drainage basins contain the world's largest supply of fresh water. There are many possible sources of contamination to the Great Lakes via ground water, but no comprehensive data base contains or evaluates the vast amount of information available for use in protecting this vital water resource. National interest and concern in the Great Lakes establishes a need to address this problem.



\*\*\* OBJECTIVE \*\*\* To define the major hydrologic regimes of the Great Lakes Basin and to delineate these areas as having significant potential for ground-water contamination and to evaluate the significance of contaminant movement to the lakes from those areas.

\*\*\* APPROACH \*\*\* Available existing information and maps will be collected and evaluated for the purpose of defining and delineating natural hydrogeologic regimes of the basin. That information will then be synthesized into interpretive maps depicting parameters such as surficial and bedrock geology, permeability and thickness of surficial materials, ground-water flow characteristics, aquifer utilization, land use, well locations or water quality, and sources of contamination. These parameter maps would then be used to construct an interpretive contamination potential map of the basin.

\*\*\* SUMMARY OF RESULTS \*\*\* Municipal well information was collected and projected into map coordinates. Potential hazardous waste, water quality, population, hydrologic units and streams, and political boundary maps were obtained. A bibliography of 1,200 references was compiled and report write-up was initiated.

\*\*\* PLANS NEXT YEAR \*\*\* The bibliography will be edited and indexed; manuscript and maps will be completed by year-end. Michigan municipal well information will be collected and encoded. Map parameters will be prioritized and two more overlays will be developed and published. A pilot study area will be located and work initialized.

\*\*\* HEADQUARTERS OFFICE \*\*\* Urbana, Illinois

\*\*\* FIELD LOCATION \*\*\* United States portion of the Great Lakes basin

\*\*\* PROJECT CHIEF \*\*\* Marvin G. Sherrill

\*\*\* PERIOD OF PROJECT \*\*\* January 1987 to December 1987

\*\*\* PLANNED REPORT \*\*\*

Bibliography of Hydrogeologic Studies and the Application of GIS to Ground-Water Contamination Evaluation, Great Lakes

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PUBLICATIONS

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## 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, 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.

Beginning with the 1971 water year, a new publication series, entitled "U.S. Geological Survey Water-Data Reports," combined 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).

Prior to the 1971 water year, records of streamflow, ground-water levels, and quality of water were published 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.

#### 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 Water-Resources Investigations Report 87-4207, "Technique for estimating flood-peak discharges and frequencies on rural streams in Illinois," by G. W. Curtis, 1987.

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, 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.
- W 2301 Relation between quality of urban runoff and quality of Lake Ellyn at Glen Ellyn, Illinois, by Robert G. Striegl and Ellen A. Cowan. 1987.

## 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.

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

- HA-39. Floods in the Little Calumet River basin, near Chicago Heights, [north-eastern] Illinois. 1960.
- HA-61. Stream composition of the conterminous United States, by F. H. Rainwater. 1962.
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- HA-194. Generalized map showing annual runoff and productive aquifers in the conterminous United States, compiled by C. L. McGuinness. 1964.
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- 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.
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- HA-226. Floods in Antioch quadrangle, northeastern Illinois, by A. W. Noehre and G. L. Walter. 1966.
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- HA-251. Floods in Peotone quadrangle, northeastern Illinois, by H. E. Allen. 1967.
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- 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.
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- 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.
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- HA-463. Floods in Marengo South quadrangle, northeastern Illinois, by H. E. Allen. 1972.
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- HA-472. Floods in Big Rock quadrangle, northeastern Illinois, by R. T. Mycyk G. L. Walter, and B. L. McDonald. 1973.
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## Hydrologic-Unit Maps

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

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

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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.

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- WRI 77-104. Frequency analysis of Illinois floods using observed and synthetic streamflow records, by G. W. Curtis, 1977. (PB 277350/AS)
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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, 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.
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- 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.
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- 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.
- 87-4024. Assessment of water quality and factors affecting dissolved oxygen in the Sangamon River, Decatur to Riverton, Illinois, summer 1982, by Arthur R. Schmidt and John K. Stamer, 1987.
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- 87-4207. Technique for estimating flood-peak discharges and frequencies on rural streams in Illinois, by G. W. Curtis, 1987.

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- 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.
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- 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.
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- 82-693. Work Plan for the Sangamon River basin, Illinois, by J. K. Stamer and D. M. Mades, 1983.
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- 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.
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- 84-603. Effects of urban runoff on Lake Ellyn at Glen Ellyn, Illinois, by R. G. Striegl, 1985.
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- 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.
- 86-301. Evapotranspiration and microclimate at a low-level radioactive-waste disposal site in northwestern Illinois, by R. W. Healy, M. P. deVries, and A. M. Sturrock, Jr., 1987.
- 86-416(W). Observation-well network in Illinois, 1984, by D. C. Voelker, 1986.
- 87-39. Water-resources activities in Illinois, 1986, by Mary L. Garrelts, 1987.
- 87-473. Surface-water-quality assessment of the upper Illinois River basin in Illinois, Indiana, and Wisconsin: Project description, by Dean M. Maden, 1987.
- 87-543. Data-collection methods and data summary for the assessment of water quality in Cedar Creek, west-central Illinois, by R. D. McFarlane, W. O. Freeman, and A. R. Schmidt, 1987.

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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,  
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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., 1987, Water withdrawals in Illinois, 1986.
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- 1954, Floods in Illinois--Magnitude and frequency.
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- Prugh, B. J., Jr., 1976, Depth and frequency of floods in Illinois.
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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)
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Rolla, Missouri 65401

Phone: (314) 364-3680

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U.S. Geological Survey  
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Reston, Virginia 22092

Phone: (703) 648-6660

GENERAL INFORMATION

Public Inquiries Office  
U.S. Geological Survey  
503 National Center  
Reston, Virginia 22092

Phone: (703) 648-6892

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TABLES 2 and 3

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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.
- D7 - Discharge - continuous record of stage and discharge for months of March through September.
- DS - Discharge with auxiliary slope gage - continuous record of stage and discharge.
- R - Lake contents - furnished by U.S. Army Corps of Engineers, St. Louis District.
- S - Stage - continuous record of stage.
- S/8 - Stage at 0800 hours.
- SD - Suspended sediment.

Station number	Station name	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 number	Station name	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.	D7
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.	D7,CQ
05444000	Elkhorn Creek near Penrose, Ill.	D,CQ
05446000	Rock Creek at Morrison, Ill.	C
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.	D7
05466000	Edwards River near Orion, Ill.	D

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

Station number	Station name	Type of data
05466500	Edwards River near New Boston, Ill.	D,CQ
05467000	Pope Creek near Keithsburg, Ill.	D7
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
05512500	Bay Creek at Pittsfield, Ill.	D
05513000	Bay Creek at Nebo, Ill.	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,CQ
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
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
05536340	Midlothian Creek at Oak Forest, Ill.	D

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

Station number	Station name	Type of data
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,CQ
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 Johnsbury, 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
05556200	Illinois River at Hennepin, Ill.	CQ

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

Station number	Station name	Type of data
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
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
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
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
05576022	South Fork Sangamon River below Rochester, Ill.	CQ
05576250	Sugar Creek near Springfield, Ill.	CQ

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

Station number	Station name	Type of data
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
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.	D
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,S/8
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
05591400	Jonathan Creek near Sullivan, Ill.	CQ
05591500	Asa Creek at Sullivan, Ill.	CQ

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

Station number	Station name	Type of data
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
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/8
05595820	Casey Fork at 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/8
05595950	Rend Lake near Benton, Ill.	R,CQ
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

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

Station number	Station name	Type of data
05597280	Little Muddy River near Elkhville, 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 by County

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.

Station number	Local well name	Ownership	Type of data
ADAMS COUNTY			
394705091105101	Plainville #1	Municipal	Q,M,B
394722091183601	Bluffview Mobile Home Park #1	Private	Q,M,B
394907091143001	Payson #1	Municipal	Q,M,B
394907091143002	Payson #2	Municipal	Q,M,B
395152091232701	S & K Mobile Home Park #1	Private	Q,M,B
395158091233801	T & C Mobile Home Park #1	Private	Q,M,B
395216091234401	Mill Creek Water District #1	Municipal	Q,M,B
395223091234901	Mill Creek Water District #2	Municipal	Q,M,B
395743091230801	Hidden Inn Mobile Home Park #1	Private	Q,M,B
395753091230001	Wayside Trailer Mobile Home Park #1	Private	Q,M,B
395753091230002	Wayside Trailer Mobile Home Park #2	Private	Q,M,B
395835091223901	Rancho Vista Estates Mobile Home Park #1	Private	Q,M,B
395934091232301	Paradise Lane Mobile Home Park #2	Private	Q,M,B
395934091235201	Spring Lake Country Club #1	Private	Q,M,B
395938091232401	Paradise Lane Mobile Home Park #1	Private	Q,M,B
400026091242401	Clayton-Camp Point Water Commission #1	Municipal	Q,M,B
400026091242501	Clayton-Camp Point Water Commission #2	Municipal	Q,M,B
400453091220201	Ursa #1	Municipal	Q,M,B
400453091220501	Mendon #8	Municipal	Q,M,B
400457091220501	Mendon #9	Municipal	Q,M,B
400929091131301	Lorraine #1	Municipal	Q,M,B
401028091224601	Lima #2	Municipal	Q,M,B
401048091224501	Lima #1	Municipal	Q,M,B
BOND COUNTY			
384817089290901	Pocahontas #7	Municipal	Q,M,B
384821089291401	Pocahontas #6	Municipal	Q,M,B
BOONE COUNTY			
421649088513801	Belvidere #1	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
BROWN COUNTY			
400022090522301	Mound Station #1	Municipal	Q,M,B
BUREAU COUNTY			
411917089182801	Depue #2	Municipal	Q,M,B
411918089182501	Depue #3	Municipal	Q,M,B
411928089403801	Buda #5	Municipal	Q,M,B
411928089403901	Buda #2	Municipal	L,Q,M,B
411944089121501	Spring Valley #10	Municipal	Q,M,B
411959089124501	Spring Valley #11	Municipal	L,Q,M,B
412017089472401	Sheffield 512	Federal	L,Q
412017089472701	Sheffield 524	Federal	L,Q
412019089472501	Sheffield 505	Federal	L
412022089472401	Sheffield 502	Federal	L,Q
412109089315401	Prarie View Nursing Home #2	Private	Q,M,B
412111089315301	Prarie View Nursing Home #1	Private	Q,M,B
412157089350202	Wyanet #2	Municipal	Q,M,B
412219089291301	Hillview Mobile Home Park #2	Private	Q,M,B
412220089280301	16N-9E-16.8e	Private	L
412220089291201	Hillview Mobile Home Park #1	Private	Q,M,B
412222089292101	Hillview Mobile Home Park #3	Private	Q,M,B
412238089291001	Elm City Mobile Home Park #1	Private	Q,M,B
412238089291201	Elm City Mobile Home Park #2	Private	Q,M,B
412259089501101	Mineral #1	Municipal	Q,M,B
412340089292301	Maple Acres Mobile Home Park #1	Private	Q,M,B
412341089292301	Maple Acres Mobile Home Park #2	Private	Q,M,B
413330089353701	Walnut #5	Municipal	Q,M,B
413335089353601	Walnut #7	Municipal	Q,M,B
413336089353601	Walnut #6	Municipal	Q,M,B
CALHOUN COUNTY			
390919090370201	Hardin #2	Municipal	Q,M,B
390921090370101	Hardin #1	Municipal	Q,M,B
CARROLL COUNTY			
415745089463401	Milledgeville #3	Municipal	L,Q,M,B
415745089463402	Milledgeville #4	Municipal	L,Q,M,B
420052089532601	Chadwick #2	Municipal	L,Q,M,B
420052089532602	Chadwick #3	Municipal	L,Q,M,B
420451090070301	Savanna #6	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
CARROLL COUNTY--Continued			
420503090061001	Carroll Heights Utility Company #3	Private	Q,M,B
420512090062801	Carroll Heights Utility Company #1	Private	Q,M,B
420520090082201	Savanna #4	Municipal	Q,M,B
420534089590001	Mt. Carroll #2	Municipal	L,Q,M,B
420535089585701	Mt. Carroll #3	Municipal	L,Q,M,B
420608089501401	Lanark #4	Municipal	Q,M,B
420611090092901	Savanna #5	Municipal	Q,M,B
420614089500101	Lanark #3	Municipal	L,Q,M,B
420858089442001	Shannon #2	Municipal	L,Q,M,B
420858089442101	Shannon #1	Municipal	Q,M,B
421241089433401	Thomson #5	Municipal	L,Q,M,B
CASS COUNTY			
395311090224201	Arenzville #1	Municipal	Q,M,B
395311090224202	Arenzville #2	Municipal	Q,M,B
400300090092801	Chandlerville #2	Municipal	Q,M,B
CHAMPAIGN COUNTY			
400622088025401	St. Joseph #4	Municipal	Q,M,B
400639088023301	St. Joseph #5	Municipal	Q,M,B
400639088024101	St. Joseph #6	Municipal	Q,M,B
400832088190601	Champaign #54	Municipal	L,Q,M,B
401137088241401	Mahomet #2	Municipal	Q,M,B
401225088221501	Sangamon Valley Public Water Dist. #3	Municipal	Q,M,B
401711088072501	Chanute Air Force Base #C-2	Federal	Q,M,B
401712088071901	Chanute Air Force Base #C-1	Federal	Q,M,B
401805088090101	Chanute Air Force Base #B-5	Federal	L,Q,M,B
401816088090101	Chanute Air Force Base #B-2	Federal	Q,M,B
401816088090801	Chanute Air Force Base #B-1	Federal	L,Q,M,B
401842088095201	Rantoul #8	Municipal	Q,M,B
401844088093401	Rantoul #6	Municipal	L,Q,M,B
401846088093301	Rantoul #5	Municipal	L,Q,M,B
CHRISTIAN COUNTY			
392438089262101	Morrisonville #6	Municipal	Q,M,B
392911089035301	Kemmerer Village #6	Municipal	Q,M,B
392913089034701	Kemmerer Village #3	Municipal	Q,M,B
392915089033701	Kemmerer Village #7	Municipal	Q,M,B
392916089034701	Kemmerer Village #5	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
CHRISTIAN COUNTY--Continued			
392923089032801	Kemmerer Village #4	Municipal	Q,M,B
393650089103601	Stonington #11	Municipal	Q,M,B
393653089103601	Stonington #10	Municipal	Q,M,B
394559089160901	Mount Auburn #3	Municipal	Q,M,B
394605089155301	Mount Auburn #1	Municipal	Q,M,B
394605089155601	Mount Auburn #2	Municipal	Q,M,B
CLARK COUNTY			
392822087594101	Westfield #7	Municipal	Q,M,B
392823087592601	Westfield #6	Municipal	Q,M,B
CLINTON COUNTY			
383602089401901	Trenton #3	Municipal	Q,M,B
383602089402201	Trenton #2	Municipal	Q,M,B
383608089014601	Aviston #1	Municipal	Q,M,B
383610089014901	Aviston #2	Municipal	Q,M,B
COLES COUNTY			
392346088275801	Clear Water Service Corp. #5	Private	Q,M,B
392347088272901	Clear Water Service Corp. #3	Private	Q,M,B
392348088273701	Clear Water Service Corp. #4	Private	Q,M,B
392348088274501	Clear Water Service Corp. #2	Private	Q,M,B
392416088263501	Clear Water Service Corp. #6	Private	Q,M,B
COOK COUNTY			
412832087380501	Steger #3	Municipal	Q,M,B
412841087422701	Richton Park #1	Municipal	L,Q,M,B
412853087373401	South Chicago Heights #3	Municipal	Q,M,B
412912087430101	Richton Park #2	Municipal	L,Q,M,B
412919087380801	South Chicago Heights #2	Municipal	Q,M,B
412921087335001	Sauk Village #1	Municipal	Q,M,B
413002087335501	Sauk Village #3	Municipal	Q,M,B
413020087345901	Ford Heights #4	Municipal	Q,M,B
413021087345801	Ford Heights #7	Municipal	Q,M,B
413024087325101	Linway Estates Mobile Home Park #2	Private	Q,M,B

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

Station number	Local well name	Ownership	Type of data
COOK COUNTY--Continued			
413024087325301	Linway Estates Mobile Home Park #1	Private	Q,M,B
413031087345901	Ford Heights #6	Municipal	Q,M,B
413048087345801	Ford Heights #5	Municipal	Q,M,B
413856087492601	Metro Utility Midwest Palos Div. #1	Private	Q,M,B
414208087544501	Palos Forest Preserve DH-1	Federal	L,Q,M
414222087543601	Palos Forest Preserve DH-2	Federal	L,Q,M
414227087543701	Palos Forest Preserve DH-3	Federal	L,Q,M
414230087544201	Palos Forest Preserve DH-4	Federal	L,Q,M
414231087544001	Palos Forest Preserve DH-13	Federal	L,Q,M
414232087544101	Palos Forest Preserve DH-7	Federal	L,Q,M
414235087543901	Palos Forest Preserve DH-5	Federal	L,Q,M
414235087544001	Palos Forest Preserve DH-8	Federal	L,Q,M
414236087544001	Palos Forest Preserve DH-16	Federal	L,Q,M
414237087543901	Palos Forest Preserve DH-6	Federal	L,Q,M
414237087543902	Palos Forest Preserve DH-17	Federal	L,Q,M
414238087544001	Palos Forest Preserve DH-9	Federal	L,Q,M
414238087544002	Palos Forest Preserve DH-11	Federal	L,Q,M
414238087544003	Palos Forest Preserve DH-14	Federal	L,Q,M
414238087544004	Palos Forest Preserve DH-15	Federal	L,Q,M
414238087544101	Palos Forest Preserve DH-12	Federal	L,Q,M
414239087544101	Palos Forest Preserve DH-10	Federal	L,Q,M
420432088114101	Hoffman Estates #22	Municipal	L,Q,M,B
CUMBERLAND COUNTY			
391518088102501	Greenup #3	Municipal	Q,M,B
391522088102501	Greenup #5	Municipal	Q,M,B
391551088102201	Greenup #6	Municipal	Q,M,B
391635088134801	Toledo #5	Municipal	Q,M,B
391635088134901	Toledo #6	Municipal	Q,M,B
391635088135101	Toledo #7	Municipal	Q,M,B
391636088134801	Toledo #3	Municipal	Q,M,B
DE KALB COUNTY			
413847088392401	Buck Lake Estates Subdivision #1	Municipal	Q,M,B
413848088395201	Buck Lake Estates Subdivision #2	Municipal	Q,M,B
414603088521601	Shabbona #4	Municipal	Q,M,B
415455088412101	Briarwood Acres Subdivision #1	Municipal	Q,M,B
415528088413901	Cortland #1	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
DE WITT COUNTY			
400705088451001	Weldon #3	Municipal	Q,M,B
400846088573801	Clinton #6	Municipal	Q,M,B
400847088574201	Clinton #3	Municipal	Q,M,B
400849088573001	Clinton #9	Municipal	L,Q,M,B
401342088574801	Wapella #2	Municipal	Q,M,B
401342088574802	Wapella #3	Municipal	Q,M,B
401444088381201	Farmer City #2	Municipal	Q,M,B
401452088375901	Farmer City #4	Municipal	Q,M,B
401454088380301	Farmer City #6	Municipal	Q,M,B
401505088382901	Farmer City #7	Municipal	Q,M,B
401517088383501	Farmer City #10	Municipal	Q,M,B
DOUGLAS COUNTY			
394054088080501	Hindsboro #4	Municipal	Q,M,B
394103088075801	Hindsboro #1	Municipal	Q,M,B
394119088183501	Arcola #8 (2a)	Municipal	L,Q,M,B
394144088173301	Arcola #5	Municipal	L,Q,M,B
394748088164001	Douglas Water Company Inc. #9	Private	Q,M,B
DU PAGE COUNTY			
414217087592801	Argonne #9	Federal	L,B
414236087583301	Argonne #10	Federal	L,B
414602087564601	Willowbrook #3	Municipal	Q,M,B
414603087564701	Willowbrook #1	Municipal	Q,M,B
414613087565601	Willowbrook #2	Municipal	Q,M,B
414618087563601	Willowbrook #4	Municipal	Q,M,B
414633088080501	Naperville #5	Municipal	L,Q,M,B
414736088013901	Downers Grove #6	Municipal	L,Q,M,B
414952087592601	Oak Brook #6	Municipal	L,Q,M,B
415149088061701	Wheaton #2	Municipal	L,Q,M,B
EDWARDS COUNTY			
381556087585701	Albion #3	Municipal	Q,M,B
381557087590001	Albion #1	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
EFFINGHAM COUNTY			
385534088392201	Edgewood #4	Municipal	Q, M, B
385542088380701	Edgewood #3	Municipal	Q, M, B
385544088380701	Edgewood #1	Municipal	Q, M, B
385544088380801	Edgewood #6	Municipal	Q, M, B
385545088380701	Edgewood #8	Municipal	Q, M, B
390225088233701	Dieterich #7	Municipal	Q, M, B
390227088233301	Dieterich #6	Municipal	Q, M, B
390326088225501	Dieterich #8	Municipal	Q, M, B
GALLATIN COUNTY			
374351088151401	Equality #1	Municipal	Q, M, B
GREENE COUNTY			
391426090274801	Mt. Gilead #1	Municipal	Q, M, B
393146090272702	Roodhouse #2	Municipal	Q, M, B
GRUNDY COUNTY			
411112088180601	Gardner #1	Municipal	Q, M, B
411112088180602	Gardner #4	Municipal	Q, M, B
411118088181601	Gardner #3	Municipal	Q, M, B
411123088183001	Gardner #2	Municipal	Q, M, B
411331088155302	Braceville #1	Municipal	Q, M, B
411331088155303	Braceville #3	Municipal	Q, M, B
411655088170501	Coal City #3	Municipal	Q, M, B
411656088171401	Coal City #4	Municipal	Q, M, B
411736088171201	Coal City #5	Municipal	Q, M, B
412129088252701	Morris #4	Municipal	Q, M, B
412129088253301	Morris #3	Municipal	Q, M, B
412143088254901	Morris #5	Municipal	Q, M, B
412720088153201	Minooka #3	Municipal	Q, M, B
412720088153202	Minooka #4	Municipal	Q, M, B
HARDIN COUNTY			
372640088184301	Elizabethtown #2	Municipal	Q, M, B

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

Station number	Local well name	Ownership	Type of data
HENRY COUNTY			
411037090185501	Woodhull #1	Municipal	Q,M,B
411037090185502	Woodhull #2	Municipal	Q,M,B
411155090071301	Bishop Hill #1	Municipal	Q,M,B
411735090173501	Andover #1	Municipal	Q,M,B
411747090212901	Lynn Center #1	Municipal	Q,M,B
411839090232501	Lake Lynnwood Water System #1	Municipal	Q,M,B
412057090165501	Osco #2	Municipal	Q,M,B
412151090095301	Hillcrest Home #2	Municipal	Q,M,B
412153090095001	Hillcrest Home #3	Municipal	Q,M,B
412353090254101	Sunny Hill Estates Subdivision #1	Municipal	Q,M,B
412357089542601	Annawan #2	Municipal	Q,M,B
412358089542701	Annawan #1	Municipal	Q,M,B
412516090004201	Atkinson #1	Municipal	Q,M,B
412517090004801	Atkinson #2	Municipal	Q,M,B
412611090245901	Oakwood Place Subdivision #1	Municipal	Q,M,B
412703090253601	Timber Ridge Subdivision #1	Municipal	Q,M,B
412806090191701	Level Acres #2	Municipal	Q,M,B
412807090192501	Green River #5	Municipal	Q,M,B
412807090211901	Rock River View #1	Municipal	Q,M,B
412810090195901	Level Acres #1	Municipal	Q,M,B
412811090192201	Level Acres Briargate Water Assn. #1	Municipal	Q,M,B
412814090220001	Green Rock #1	Municipal	Q,M,B
412819090202601	East Portal Water System #1	Municipal	Q,M,B
412855090212201	Colona #2	Municipal	Q,M,B
412901090220501	Green Rock #2	Municipal	Q,M,B
412904090215601	Kershaw Mobile Home Park #2	Private	Q,M,B
412904090221001	Kershaw Mobile Home Park #1	Private	Q,M,B
412914090191801	Dayton's Valley View #1	Municipal	Q,M,B
412956090160801	Rustic Acres #1	Municipal	Q,M,B
412958090093201	Country Estates Subdivision #1	Municipal	Q,M,B
412959090143001	Lynnwood 1st Addition #2	Municipal	Q,M,B
413008090133201	Hazelwood Heights Subdivision #1	Municipal	Q,M,B
413009090143701	Lynnwood 3rd Addition #1	Municipal	Q,M,B
413021090122301	Hazelwood 4th Addition #1	Municipal	Q,M,B
413031090114201	Hazelwood 2nd Addition #2	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
HENRY COUNTY--Continued			
4 13031090120101	Hazelwood 1st Addition #5	Municipal	Q,M,B
4 13031090143701	Holmes Small Farm Subdivision #1	Municipal	Q,M,B
4 13034090120501	Hazelwood 1st Addition #3	Municipal	Q,M,B
4 13037090113501	Hazelwood 3rd Addition #1	Municipal	Q,M,B
4 13038090114101	Hazelwood 2nd Addition #3	Municipal	Q,M,B
4 13113090150201	Rock Riverview Mobile Home Park #2	Private	Q,M,B
4 13142090115701	North Hazelwood Subdivision #1	Municipal	Q,M,B
4 13156090120401	Timberbrook Estates #1	Municipal	Q,M,B
JASPER COUNTY			
385614088012101	Ste. Marie #2	Municipal	Q,M,B
385945088021201	Willow Hill #2	Municipal	Q,M,B
385945088022401	Willow Hill #1	Municipal	Q,M,B
385950088084801	Newton #4	Municipal	Q,M,B
385953088085601	Newton #3	Municipal	Q,M,B
JERSEY COUNTY			
385810090270201	Grafton #2	Municipal	Q,M,B
385810090270401	Grafton #3	Municipal	Q,M,B
JO DAVIESS COUNTY			
421528090170501	Hanover #1	Municipal	Q,M,B
421532090171001	Hanover #2	Municipal	L,Q,M
421908090132901	Elizabeth #1	Municipal	Q,M,B
422056090001701	Stockton #4	Municipal	Q,M,B
422101090003001	Stockton #6	Municipal	Q,M,B
422111090004101	Stockton #5	Municipal	Q,M,B
422250090183701	Galena Territory #3 (Shenandoah #2)	Municipal	L,Q,M
422306090180201	Galena Territory #4 (Shenandoah #1)	Municipal	L,Q,M
422346090201301	Galena Territory #2 (Resort Core #1)	Municipal	L,Q,M
422417090184301	Galena Territory #6	Municipal	L,Q,M
422443090193501	Galena Territory #1 (Thunder Bay #1)	Municipal	L,Q,M
422443090262201	Galena #6	Municipal	L,Q,M
422514090201201	Galena Territory #402 (Thunder Bay #2)	Municipal	Q,M,B
422544090263301	Galena #5	Municipal	L,Q,M
422546090083301	Apple Canyon Utility Company #1	Private	L,Q,M

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

Station number	Local well name	Ownership	Type of data
JO DAVIESS COUNTY--Continued			
422836090145401	Scales Mound #3	Municipal	L,Q,M
422836090145601	Scales Mound #2	Municipal	L,Q,M
422919090382901	East Dubuque #4 (Local #3)	Municipal	L,Q,M
422931090384701	East Dubuque #3 (Local #2)	Municipal	L,Q,M
422948089591201	Warren #3	Municipal	L,Q,M
422951089592301	Warren #2	Municipal	L,Q,M
423001089594001	Warren #4	Municipal	Q,M,B
KANE COUNTY			
414338088185501	Montgomery #8	Municipal	Q,M,B
414338088201201	Montgomery #3	Municipal	Q,M,B
414343088204001	Montgomery #2	Municipal	Q,M,B
414357088183401	Pleasant Village #1	Municipal	Q,M,B
414401088205001	Montgomery #4	Municipal	Q,M,B
414411088170401	Parkview Water Corporation #1	Private	Q,M,B
414622088194401	Aurora #17	Municipal	Q,M,B
415257088202001	Geneva #6	Municipal	L,Q,M,B
415335088281701	Elburn #2	Municipal	Q,M,B
415426088222001	Illinois Youth Center St. Charles #5	State	Q,M,B
415436088354701	Maple Park #4	Municipal	Q,M,B
415438088222501	Illinois Youth Center St. Charles #4	State	L,Q,M
415636088182901	Highland Subdivision #1	Municipal	Q,M,B
415734088175001	St. Charles Skyline #1	Municipal	Q,M,B
415924088171701	South Elgin #3	Municipal	Q,M,B
420028088192601	Rollins Sewer & Water Company #1	Private	Q,M,B
420201088201001	Elgin #5a	Municipal	Q,M,B
420203088195301	Elgin #1a	Municipal	Q,M,B
420204088193101	Elgin #4a	Municipal	Q,M,B
420205088194501	Elgin #2a	Municipal	Q,M,B
420317088171701	Elgin #6	Municipal	Q,M,B
420322088171301	Elgin #5	Municipal	Q,M,B
420324088170901	Elgin #1	Municipal	Q,M,B
420326088170401	Elgin #3	Municipal	Q,M,B
420326088170601	Elgin #2	Municipal	Q,M,B
420327088170301	Elgin #4	Municipal	Q,M,B
420524088211801	Gilberts #1	Municipal	Q,M,B
420612088161101	East Dundee #3	Municipal	Q,M,B
420821088242001	Powers Water Inc. #1	Private	Q,M,B

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

Station number	Local well name	Ownership	Type of data
KANKAKEE COUNTY			
410857088140601	Lake Shannon #1	Municipal	Q, M, B
410942087402401	Momence #5	Municipal	L, Q, M
410943087395001	Momence #1	Municipal	Q, M, B
410943087395002	Momence #2	Municipal	Q, M, B
411010087400901	Momence #4	Municipal	Q, M, B
411441087501901	Manteno #2	Municipal	Q, M, B
411448087500001	Manteno #4	Municipal	Q, M, B
411453087503101	Manteno #3	Municipal	Q, M, B
411626087491401	Bill's Mobile Home Park #1	Private	Q, M, B
411626087491402	Bill's Mobile Home Park #2	Private	Q, M, B
411628087491401	A.C. Mobile Home Park #1	Private	Q, M, B
KENDALL COUNTY			
413152088342801	Newark #3	Municipal	Q, M, B
413220088350601	Newark #2	Municipal	Q, M, B
413830088265201	Yorkville #3	Municipal	Q, M, B
413900088264801	Yorkville #4	Municipal	Q, M, B
414041088211901	Oswego #3	Municipal	Q, M, B
414113088202401	Oswego #4	Municipal	Q, M, B
414223088214201	Metro Utility Valley Div. #2	Private	Q, M, B
LAKE COUNTY			
413152088021702	Woodcreek Mobile Home Park #3	Private	Q, M, B
420946087555401	Pekara Subdivision #3	Municipal	Q, M, B
420947087561801	Pekara Subdivision #5	Municipal	L, Q, M
420953087554101	Pekara Subdivision #2	Municipal	Q, M, B
420953087554201	Pekara Subdivision #4	Municipal	Q, M, B
421002088042001	Sturm Subdivision #1	Municipal	Q, M, B
421007087551001	Riverwoods Special Services Dist. 3 #1	Municipal	Q, M, B
421007087551002	Riverwoods Special Services Dist. 3 #2	Municipal	Q, M, B
421116088051001	Rand Estates #1	Municipal	Q, M, B
421124088042301	Lake Zurich #7	Municipal	Q, M, B
421216088041201	Lake Zurich #8	Municipal	Q, M, B
421220088051501	Summit HOA #1	Municipal	Q, M, B
421239088063801	Lake Zurich #5	Municipal	Q, M, B
421243088051501	Lakewood Water System #1	Municipal	Q, M, B
421257088024901	Hawthorn Woods #3	Municipal	Q, M, B

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

Station number	Local well name	Ownership	Type of data
LAKE COUNTY--Continued			
421257088025701	Hawthorn Woods #2	Municipal	Q,M,B
421259088024501	Hawthorn Woods #4	Municipal	Q,M,B
421302088021901	Hawthorn Woods #2G	Municipal	Q,M,B
421302088030801	Hawthorn Woods #1	Municipal	Q,M,B
421303088025001	Hawthorn Woods #7	Municipal	Q,M,B
421303088052101	Acorn Acres Subdivision #6	Municipal	Q,M,B
421304088024101	Hawthorn Woods #5	Municipal	Q,M,B
421304088024501	Hawthorn Woods #6	Municipal	Q,M,B
421304088031301	Hawthorn Woods #8	Municipal	Q,M,B
421304088054001	Acorn Acres Subdivision #5	Municipal	Q,M,B
421305088023001	Hawthorn Woods #1G	Municipal	Q,M,B
421309088021501	Hawthorn Woods #4G	Municipal	Q,M,B
421309088050001	Acorn Acres Subdivision #1	Municipal	Q,M,B
421310088022101	Hawthorn Woods #3G	Municipal	Q,M,B
421310088053701	Acorn Acres Subdivision #4	Municipal	Q,M,B
421311088030001	Hawthorn Woods #12	Municipal	Q,M,B
421313088020901	Hawthorn Woods #6G	Municipal	Q,M,B
421313088021901	Hawthorn Woods #5G	Municipal	Q,M,B
421314088023001	Hawthorn Woods #9	Municipal	Q,M,B
421314088051101	Acorn Acres Subdivision #2	Municipal	Q,M,B
421314088055901	Acorn Acres Subdivision #8	Municipal	Q,M,B
421315088023801	Hawthorn Woods #10	Municipal	Q,M,B
421315088052801	Acorn Acres Subdivision #3	Municipal	Q,M,B
421315088054801	Acorn Acres Subdivision #7	Municipal	Q,M,B
421318088030401	Hawthorn Woods #11	Municipal	Q,M,B
421320088022101	Hawthorn Woods #8G	Municipal	Q,M,B
421325088061701	Mt. St. Joseph Sheltered Care Home #3	Private	Q,M,B
421326088063101	Mt. St. Joseph Sheltered Care Home #1	Private	Q,M,B
421326088063801	Mt. St. Joseph Sheltered Care Home #2	Private	Q,M,B
421331088020701	Hawthorn Woods #7G	Municipal	Q,M,B
421406087594401	Towner Subdivision #2	Municipal	Q,M,B
421422088000301	Towner Subdivision #3	Municipal	Q,M,B
421431087571801	Vernon Hills #2	Municipal	Q,M,B
421431087583601	Vernon Hills #1	Municipal	Q,M,B
421433088002701	Paul's Mobile Home Park #1	Private	Q,M,B

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

Station number	Local well name	Ownership	Type of data
LAKE COUNTY--Continued			
421434088002101	Diamond Lake Mobile Home Park #2	Private	Q,M,B
421435088002101	Diamond Lake Mobile Home Park #1	Private	Q,M,B
421438088030701	Sylvan Lake 1st Subdivision #1	Municipal	Q,M,B
421438088030702	Sylvan Lake 1st Subdivision #2	Municipal	Q,M,B
421439088023701	Sylvan Lake 2nd and 3rd Subdivision #1	Municipal	Q,M,B
421443088024801	Sylvan Lake 2nd and 3rd Subdivision #2	Municipal	Q,M,B
421451088021401	Countryside Lake Subdivision #2	Municipal	Q,M,B
421505088045101	Glenkirk Campus South #3	Municipal	Q,M,B
421507088044801	Glenkirk Campus South #4	Municipal	Q,M,B
421517087593301	Mundelein #8	Municipal	Q,M,B
421534088002001	Mundelein #10	Municipal	Q,M,B
421537088082101	Wauconda #2	Municipal	L,Q,M,B
421537088082701	Wauconda #1	Municipal	L,Q,M,B
421545088024501	Countryside Lake Subdivision #1	Private	Q,M,B
421601088054401	Glenkirk Campus North #2	Municipal	Q,M,B
421602088054201	Glenkirk Campus North #1	Municipal	Q,M,B
421624087592601	Mundelein #6	Municipal	Q,M,B
421635088003401	Mundelein #4	Municipal	Q,M,B
421638088075701	Wauconda #4	Municipal	Q,M,B
421652088003601	Mundelein #5	Municipal	Q,M,B
421658088001601	Mundelein #7	Municipal	Q,M,B
421703087521001	Rockland Mobile Home Park #1	Private	Q,M,B
421704087521001	Rockland Mobile Home Park #2	Private	Q,M,B
421757088012401	Mundelein #9	Municipal	Q,M,B
421802087554601	Countryside Manor Subdivision #3	Municipal	Q,M,B
421805087531601	Heiden Gardens Condos #1	Private	Q,M,B
421818087565201	Countryside Manor Subdivision #1	Municipal	Q,M,B
422009088063901	Chain O'Lakes Mobile Home Park #1	Private	Q,M,B
422025087593601	Wildwood Subdivision #3	Municipal	Q,M,B
422025087593602	Wildwood Subdivision #7	Municipal	Q,M,B
422044088014301	Grayslake #4	Municipal	Q,M,B
422045087530201	Colonial Park Apts. #1	Private	Q,M,B
422045088022502	Grayslake #1	Municipal	Q,M,B
422050088044901	Round Lake Park #3	Municipal	Q,M,B
422050088044902	Round Lake Park #4	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
LAKE COUNTY--Continued			
422059087531001	Park City Mobile Home Park #1	Private	Q,M,B
422100088062801	Round Lake #3	Municipal	Q,M,B
422103087531001	Park City Mobile Home Park #2	Private	Q,M,B
422103087531002	Park City Mobile Home Park #3	Private	Q,M,B
422111088052901	Round Lake #1	Municipal	Q,M,B
422116087593401	Wildwood Subdivision #4	Municipal	Q,M,B
422121087531601	Park City Mobile Home Park #4	Private	Q,M,B
422130088035601	Highland Lake Subdivision #3	Municipal	Q,M,B
422147088040101	Highland Lake Subdivision #2	Municipal	Q,M,B
422152088004501	Wildwood Subdivision #5	Municipal	Q,M,B
422152088004502	Wildwood Subdivision #6	Municipal	Q,M,B
422153088062001	Round Lake Beach #5	Municipal	Q,M,B
422216088052601	Round Lake Beach #7	Municipal	Q,M,B
422218088042301	Round Lake Beach #3	Municipal	Q,M,B
422225088102501	Hilldale Manor Water Company #1	Private	Q,M,B
422225088102502	Hilldale Manor Water Company #2	Private	Q,M,B
422230088090502	Duck Lake Woods Water Assoc. #2	Private	Q,M,B
422244088032901	Round Lake Beach #6	Municipal	Q,M,B
422256088062301	Round Lake Beach #1	Municipal	Q,M,B
422506087492201	Lake View Mobile Home Park #1	Private	Q,M,B
422522087492701	Shoreline Terrace Mobile Home Park #1	Private	Q,M,B
422537087543601	Wadsworth Oaks Subdivision #1	Municipal	Q,M,B
422537087543602	Wadsworth Oaks Subdivision #2	Municipal	Q,M,B
422757087492501	Avalon Mobile Home Park #1	Private	Q,M,B
422800087492601	Holly Hock Hill Mobile Home Park #1	Private	Q,M,B
422830088052501	Antioch #3	Municipal	L,Q,M,B
LA SALLE COUNTY			
410852088521701	Kangley #1	Municipal	L,Q,M
410931088384401	Ransom #3	Municipal	Q,M,B
410932088384701	Ransom #4	Municipal	Q,M,B
411121088585401	Leonore #1	Municipal	Q,M,B
411122088585401	Leonore #2	Municipal	Q,M,B
411308089041301	Tonica #4	Municipal	Q,M,B
411310089040501	Tonica #2	Municipal	Q,M,B
411311089040201	Tonica #3	Municipal	Q,M,B
411407088495101	Grand Ridge #1	Municipal	Q,M,B
411411088493701	Grand Ridge #3	Municipal	L,Q,M

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

Station number	Local well name	Ownership	Type of data
LA SALLE COUNTY--Continued			
411607089071901	Cedar Point Water Company #1	Private	L,Q,M
411730089034401	Oglesby #4	Municipal	Q,M,B
411730089034601	Oglesby #3	Municipal	Q,M,B
411857088363401	Seneca #2	Municipal	Q,M,B
411858088363201	Seneca #1	Municipal	Q,M,B
411922089074201	Peru #5	Municipal	Q,M,B
411928089073001	Peru #7	Municipal	L,Q,M
411931089072501	Peru #6	Municipal	Q,M,B
411946088535301	La Salle County Nursing Home #1	Private	Q,M,B
411948088423801	Marseilles #3	Municipal	L,Q,M
412009088423501	Marseilles #5	Municipal	L,Q,M
412022088420001	Marseilles #4	Municipal	L,Q,M
412030089001901	North Utica #2	Municipal	Q,M,B
412032089003601	North Utica #1	Municipal	Q,M,B
412051089074401	Peru #8	Municipal	L,Q,M
412120088503701	Ottawa #10	Municipal	Q,M,B
412133088495901	Ottawa #11	Municipal	Q,M,B
412203088531501	Kountry Aire Mobile Home Park #1	Private	Q,M,B
412205088514101	Patti's Mobile Home Park #1	Private	Q,M,B
412952088402201	Sheridan Correctional Center #2	State	Q,M,B
413048088413001	Sheridan Correctional Center #3	State	Q,M,B
413100088412001	Sheridan Correctional Center #1	State	Q,M,B
413229089074301	Mendota #4	Municipal	Q,M,B
413259089070101	Mendota #5	Municipal	Q,M,B
413340089074701	Mendota #6	Municipal	L,Q,M
413528088552101	Earlville #2	Municipal	Q,M,B
413528088552102	Earlville #3	Municipal	Q,M,B
413651088411901	Lake Holiday Utility Corp. #3	Private	Q,M,B
413651088412101	Lake Holiday Utility Corp. #1	Private	Q,M,B
413654088475601	Leland #1	Municipal	L,Q,M
413654088475602	Leland #2	Municipal	L,Q,M
413705088390501	Countryside Estates Mobile Home Park #1	Private	Q,M,B
413713088385801	Holiday Estates Mobile Home Park #2	Private	Q,M,B
413715088385801	Holiday Estates Mobile Home Park #1	Private	Q,M,B
413735088395001	Lake Holiday Utility Corp. #2	Private	Q,M,B

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

Station number	Local well name	Ownership	Type of data
LAWRENCE COUNTY			
384328087362901	Lawrenceville #9	Municipal	Q,M,B
384329087362801	Lawrenceville #6	Municipal	Q,M,B
LEE COUNTY			
413839089134401	Sublette #1	Municipal	L,Q,M
413839089134402	Sublette #2	Municipal	L,Q,M
414115088585401	Paw Paw #2	Municipal	L,Q,M
414122088585401	Paw Paw #3	Municipal	L,Q,M
414128089085001	West Brooklyn #5	Municipal	Q,M,B
414245089194501	Amboy #2	Municipal	Q,M,B
414246089194401	Amboy #3	Municipal	Q,M,B
414910089343001	Moore's Mobile Home Park #2	Private	Q,M,B
414955089291901	Dixon #7	Municipal	Q,M,B
414955089315201	Green Acres Mobile Home Park #1	Private	Q,M,B
415013089232301	Nachusa Lutheran Home #1	Private	Q,M,B
415027089175501	Franklin Grove #1	Municipal	Q,M,B
415035089175901	Franklin Grove #3	Municipal	Q,M,B
415043089283101	Dixon #3	Municipal	Q,M,B
415043089283901	Dixon #5	Municipal	Q,M,B
415051089180601	Franklin Grove Health Care Center #1	Private	Q,M,B
415140089285701	Dixon #6	Municipal	Q,M,B
415154089131301	Ashton #1	Municipal	Q,M,B
415154089131501	Ashton #2	Municipal	Q,M,B
415229089282401	Dixon Correctional Center #3	State	Q,M,B
415230089275301	Dixon Correctional Center #1	State	L,Q,M
415232089275301	Dixon Correctional Center #2	State	Q,M,B
LIVINGSTON COUNTY			
403909088235001	Strawn #1	Municipal	Q,M,B
404431088241401	Forrest #1	Municipal	Q,M,B
404604088173001	Chatsworth #5	Municipal	Q,M,B
404957088400201	Livingston Manor #1	Municipal	Q,M,B
405039088511701	Salem Childrens Home #2	Private	Q,M,B
405042088511701	Salem Childrens Home #1	Private	Q,M,B
410002088313401	Odell #3	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
LOGAN COUNTY			
400022089274901	Elkhart City #3	Municipal	Q, M, B
400053089290101	Elkhart #2	Municipal	Q, M, B
400309089165401	Mt Pulaski #4	Municipal	Q, M, B
400311089165501	Mt Pulaski #5	Municipal	Q, M, B
400426089105601	Beason Chestnut Public Water Dist. #1	Municipal	Q, M, B
400738089231301	Lincoln #12 (Local #8)	Municipal	Q, M, B
400741089231001	Lincoln #14 (Local #10)	Municipal	Q, M, B
401020089230501	Lincoln #11 (Local #7)	Municipal	Q, M, B
401020089231201	Lincoln #13 (Local #9)	Municipal	Q, M, B
401103089345801	New Holland #1	Municipal	Q, M, B
401103089345802	New Holland #2	Municipal	Q, M, B
401110089350401	New Holland #3	Municipal	Q, M, B
401452088160301	Bartman Health Care Center #2	Private	Q, M, B
401505088262801	Hartsburg #1	Municipal	Q, M, B
401507089263001	Hartsburg #3	Municipal	Q, M, B
401525089134601	Atlanta #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
401754089290501	Emden #1	Municipal	Q, M, B
401754089290502	Emden #2	Municipal	Q, M, B
McDONOUGH COUNTY			
401926090361701	Industry #1	Municipal	Q, M, B
401930090361701	Industry #2	Municipal	Q, M, B
402251090463601	Colchester #6	Municipal	Q, M, B
402251090464001	Colchester #5	Municipal	Q, M, B
402515090472201	Colchester #10	Municipal	Q, M, B
402516090472001	Colchester #11	Municipal	Q, M, B
402518090472401	Colchester #1	Municipal	Q, M, B
402702090430601	Countryaire Mobile Home Park #1	Private	Q, M, B
402946090334201	Bardolph #1	Municipal	Q, M, B
403256090304601	Bushnell #3	Municipal	Q, M, B
403257090304401	Bushnell #1	Municipal	Q, M, B
403257090304402	Bushnell #2	Municipal	Q, M, B
403329090403802	Good Hope #2	Municipal	Q, M, B
403710090274601	Prairie City #1	Municipal	Q, M, B

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

Station number	Local well name	Ownership	Type of data
McHENRY COUNTY			
420915088164801	Algonquin #5	Municipal	L,Q,M
420915088254801	Huntley #6	Municipal	Q,M,B
420917088164001	Algonquin #6	Municipal	Q,M,B
421002088253201	Huntley #4	Municipal	Q,M,B
421033088192701	Lake in the Hills #1	Municipal	Q,M,B
421042088182701	Lake in the Hills #6	Municipal	Q,M,B
421113088192301	Lake in the Hills #5	Municipal	Q,M,B
421113088192401	Lake in the Hills #2	Municipal	Q,M,B
421148088160701	Cary #10	Municipal	Q,M,B
421155088132801	Fox River Grove #2	Municipal	Q,M,B
421207088151101	Cary #3	Municipal	Q,M,B
421214088142701	Cary #8	Municipal	Q,M,B
421222088152701	Cary #6	Municipal	Q,M,B
421258088190501	Crystal Lake #8	Municipal	Q,M,B
421309088142801	Cary #4	Municipal	Q,M,B
421327088164701	Oak Brook Estates Mobile Home Park #1	Private	Q,M,B
421335088204601	Crystal Lake #6	Municipal	Q,M,B
421431088165701	Prairie Ridge Assoc. Well #1	Private	Q,M,B
421432088182801	Crystal Lake #7	Municipal	Q,M,B
421438088185401	Crystal Lake #1	Municipal	Q,M,B
421506088354801	Marengo #6	Municipal	Q,M,B
421507088354801	Marengo #5	Municipal	Q,M,B
421515088210401	Royal Oaks Mobile Home Park #1	Private	Q,M,B
421516088210101	Royal Oaks Mobile Home Park #2	Private	Q,M,B
421533088193201	Walk-Up-Woods Water Company #1	Private	Q,M,B
421534088193101	Walk-Up-Woods Water Company #2	Private	Q,M,B
421537088174201	Deering Oaks Subdivision #1	Municipal	Q,M,B
421540088124101	Nunda Utility Company #1	Private	Q,M,B
421545088173801	Deering Oaks Subdivision #2	Municipal	Q,M,B
421741088132801	Community Service Corporation #1	Private	Q,M,B
421741088132802	Community Service Corporation #2	Private	Q,M,B
421911088265901	Woodstock #1	Municipal	Q,M,B
421939088174601	McHenry #7	Municipal	Q,M,B
421943088160501	McHenry #2	Municipal	Q,M,B
421956088262501	Woodstock #5	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
McHENRY COUNTY--Continued			
422037088160501	McHenry #1	Municipal	Q,M,B
422048088173801	McHenry #6	Municipal	Q,M,B
422048088174501	McHenry #5	Municipal	Q,M,B
422139088303501	Valley Hi Nursing Home #2	Private	Q,M,B
422141088303701	Valley Hi Nursing Home #1	Private	Q,M,B
422231088221101	Highland Shores #1	Municipal	Q,M,B
422320088132701	Whispering Hills Water Company #6	Private	Q,M,B
422332088140901	Whispering Hills Water Company #2	Private	Q,M,B
422355088132001	Whispering Hills Water Company #1	Private	Q,M,B
422427088122001	Whispering Hills Water Company #4	Private	Q,M,B
422427088122002	Whispering Hills Water Company #5	Private	Q,M,B
422455088370901	Harvard #5	Municipal	Q,M,B
422816088260101	Hebron #4	Municipal	Q,M,B
422822088260201	Hebron #3	Municipal	Q,M,B
McLEAN COUNTY			
402912089090901	Normal #100	Municipal	L,Q,M,B
MACON COUNTY			
394744088582601	Hyde Park Mobile Home Park #2	Private	Q,M,B
394746088582501	Hyde Park Mobile Home Park #1	Private	Q,M,B
395558089040101	Warrensburg #2	Municipal	Q,M,B
395600089040301	Warrensburg #1	Municipal	Q,M,B
MADISON COUNTY			
384333089460001	St. Jacob #4	Municipal	Q,M,B
384348089460501	St. Jacob #5	Municipal	Q,M,B
384822090034801	Roxana #10	Municipal	Q,M,B
384955090055801	Hartford #4	Municipal	Q,M,B
384957090055601	Hartford #2	Municipal	Q,M,B
384957090055701	Hartford #3	Municipal	Q,M,B
MARION COUNTY			
383647088473301	Iuka #2	Municipal	Q,M,B
383648088473201	Iuka #1	Municipal	Q,M,B
383648088473901	Iuka #3	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
MARSHALL COUNTY			
405922089272801	Watuhiyi Waterworks #5	Municipal	Q,M,B
410002089080401	Toluca #2	Municipal	L,Q,M
410025089081001	Toluca #3	Municipal	L,Q,M
410232089030601	Wenona #4	Municipal	L,Q,M
410308089030401	Wenona #5	Municipal	L,Q,M
410732089210801	Crescent Mobile Estates Mobile Home Park #1	Private	Q,M,B
MASON COUNTY			
402325089521501	Sand Ridge State Forest #2	State	Q,M,B
402326089521601	Sand Ridge State Forest #1	State	Q,M,B
402328089525401	Sand Ridge State Forest #4	State	Q,M,B
402328089525901	Sand Ridge State Forest #3	State	Q,M,B
402334089515901	Sand Ridge State Forest #5	State	Q,M,B
402504089515101	Sand Ridge State Forest #A	State	Q,M,B
MASSAC COUNTY			
370842088435101	Metropolis #3	Municipal	Q,M,B
370843088435301	Metropolis #2	Municipal	Q,M,B
371159088503101	Joppa #2	Municipal	Q,M,B
MENARD COUNTY			
395802089490001	Tallula #2	Municipal	Q,M,B
400623089361901	Middletown #1	Municipal	L,Q,M
MERCER COUNTY			
411210090262801	New Windsor #2	Municipal	Q,M,B
411937090344801	MCLW System Inc. (Hintermeister) #1	Private	Q,M,B
MONTGOMERY COUNTY			
390701089154301	Fillmore #1	Municipal	Q,M,B
391734089174701	Nokomis #7	Municipal	Q,M,B
OGLE COUNTY			
420229089242501	Mt. Morris #2	Municipal	Q,M,B
420230089243001	Mt. Morris #1	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
PEORIA COUNTY			
404009089371401	Peoria Dodge Street #4	Municipal	Q, M, B
404045089375801	Illinois American Water Company Peoria #221	Private	Q, M, B
404555089341901	Illinois American Water Company #12 (Sankoty #12)	Private	Q, M, B
405251089330801	Pinewood Mobile Home Park #2	Private	Q, M, B
405252089330801	Pinewood Mobile Home Park #1	Private	Q, M, B
405306089301101	Rome Farms No. Nine #1	Municipal	Q, M, B
405306089301102	Rome Farms No. Nine #2	Municipal	Q, M, B
PIATT COUNTY			
395339088455201	Cerro Gordo #7	Municipal	Q, M, B
395340088455001	Cerro Gordo #6	Municipal	Q, M, B
395509088341501	Bement #1	Municipal	L, Q, M
395514088344901	Bement #2	Municipal	L, Q, M
395643088433301	Cerro Gordo #8	Municipal	Q, M, B
400044088432901	Cisco #3	Municipal	Q, M, B
400138088341501	Monticello #1	Municipal	Q, M, B
400138088341502	Monticello #2	Municipal	Q, M, B
400138088341602	Monticello #4	Municipal	Q, M, B
400523088305301	White Heath Waterworks #1	Municipal	Q, M, B
400659088385701	De Land #6	Municipal	Q, M, B
400700088385601	De Land #3	Municipal	Q, M, B
401240088304101	Mansfield #2	Municipal	Q, M, B
PIKE COUNTY			
392628090473101	Nebo #1	Municipal	Q, M, B
392630090473101	Nebo #2	Municipal	Q, M, B
393116090590101	Pike Company Public Water District #1	Municipal	Q, M, B
393117090585901	Pike Company Public Water District #2	Municipal	Q, M, B
393335090381801	Milton #4	Municipal	Q, M, B
393338090382101	Milton #5	Municipal	Q, M, B
394338090541501	Baylis #2	Municipal	Q, M, B
394338090542001	Baylis #1	Municipal	Q, M, B
394536090434901	Barry #1	Municipal	Q, M, B
394537090434601	Barry #3	Municipal	Q, M, B

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

Station number	Local well name	Ownership	Type of data
PIKE COUNTY--Continued			
394553090384701	Griggsville #6	Municipal	Q, M, B
394553090384901	Griggsville #5	Municipal	Q, M, B
394715090443901	Perry #1	Municipal	Q, M, B
394717090444001	Perry #2	Municipal	Q, M, B
PULASKI COUNTY			
371051089052501	Olmsted #1	Municipal	Q, M, B
371052089052501	Olmsted #2	Municipal	Q, M, B
373615089120301	Mounds #2	Municipal	Q, M, B
373617089120301	Mounds #1	Municipal	Q, M, B
PUTNAM COUNTY			
411530089132701	Granville #2	Municipal	L, Q, M
411545089134501	Granville #1	Municipal	Q, M, B
RANDOLPH COUNTY			
380026089390501	Steeleville #5	Municipal	L, Q, M
380029089395001	Steeleville #1	Municipal	L, Q, M
380034089394201	Steeleville #3	Municipal	Q, M, B
380036089392801	Steeleville #2	Municipal	L, Q, M
380039089400201	Steeleville #4	Municipal	L, Q, M
380050089391101	Steeleville #6	Municipal	L, Q, M
380058089370901	Percy #1	Municipal	Q, M, B
380102089372801	Percy #2	Municipal	Q, M, B
380805089594701	Ruma #1	Municipal	Q, M, B
380809089595201	Ruma #2	Municipal	Q, M, B
381210089592601	Red Bud #8	Municipal	Q, M, B
381234089594801	Red Bud #9	Municipal	Q, M, B
381249089595301	Red Bud #7	Municipal	Q, M, B
381256089592401	Red Bud #6	Municipal	Q, M, B
381301089594801	Red Bud #4	Municipal	Q, M, B
381308090005201	Red Bud #11	Municipal	Q, M, B
381309089595501	Red Bud #3	Municipal	Q, M, B
ROCK ISLAND COUNTY			
412037090401601	Fitzpatric #1	Municipal	Q, M, B
412303090453701	Lemon St. Well Company Inc. #1	Private	Q, M, B
412303090453702	Lemon St. Well Company Inc. #2	Private	Q, M, B
412311090373501	Eckstroms 1st Addition #1	Municipal	Q, M, B
412400090343001	Eberts 3rd Addition #1	Municipal	Q, M, B

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

Station number	Local well name	Ownership	Type of data
ROCK ISLAND COUNTY--Continued			
4 12400090343201	Friendly Corners Water Association #1	Municipal	Q, M, B
4 12403090343301	Tindalls 4th and 5th Addition #1	Municipal	Q, M, B
4 12406090342701	Eberts 2nd Addition #1	Municipal	Q, M, B
4 12407090312901	Country Club Manor #1	Municipal	Q, M, B
4 12408090343001	Tindalls Addition Water System #1	Municipal	Q, M, B
4 12410090313401	Halen Heights Addition #1	Municipal	Q, M, B
4 12412090331901	Coyne Center #1	Municipal	Q, M, B
4 12412090361501	Tower Ridge Subdivision #1	Municipal	Q, M, B
4 12418090283001	Oak Glen Nursing Home #3	Private	Q, M, B
4 12425090484601	Chigakwa Park Estates #1	Municipal	Q, M, B
4 12433090301901	Toft Acres #1	Municipal	Q, M, B
4 12435090340901	Croppers 2nd & 3rd Addition #2	Municipal	Q, M, B
4 12439090312601	Nalevanko Rainbow Ridge Subdivision #1	Municipal	Q, M, B
4 12446090312401	Mill Creek Manor #2	Municipal	Q, M, B
4 12449090281801	Bailey Retreat Water System #1	Private	Q, M, B
4 12501090272601	Vanderheyden Subdivision #1	Municipal	Q, M, B
4 12526090452401	Winding Creek Estates #1	Municipal	Q, M, B
4 12527090454201	Hillcrest Court Subdivision #1	Municipal	Q, M, B
4 12532090390301	Park Hill Estates #3	Municipal	Q, M, B
4 12532090391201	Park Hill Estates #2	Municipal	Q, M, B
4 12534090391501	Park Hill Estates #1	Municipal	Q, M, B
4 12534090392601	Hickory Hills 1st Addition #1	Municipal	Q, M, B
4 12535090391801	Turkey Hollow Corporation #1	Private	Q, M, B
4 12535090452901	Hillcrest Court 2nd Addition #1	Municipal	Q, M, B
4 12537090340901	Suburban Heights Subdivision #1	Municipal	Q, M, B
4 12544090310301	Indian Bluff Subdivision #1	Municipal	Q, M, B
4 12546090392101	Quail Run Association #1	Municipal	Q, M, B
4 12551090312701	Water XIV #1	Municipal	Q, M, B
4 12559090313301	South #16	Municipal	Q, M, B
4 12559090511501	Doyles First Addition #1	Municipal	Q, M, B
4 12602090312101	Water Werks #1	Municipal	Q, M, B
4 12602090313701	Ferrous Water Association #1	Municipal	Q, M, B
4 12603090312701	Balcaen 3rd Addition #5	Municipal	Q, M, B
4 12603090423801	Woodland Park Water Company #1	Private	Q, M, B
4 12616090312301	Paradise Manor Mobile Home Park #1	Private	Q, M, B

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

Station number	Local well name	Ownership	Type of data
ROCK ISLAND COUNTY--Continued			
412630090312101	Airview Mobile Home Park #1	Private	Q,M,B
412829090294801	L & G Mobile Home Park #1	Private	Q,M,B
412857090235101	Whites Addition #1	Municipal	Q,M,B
412858090235901	Whites Community #2	Municipal	Q,M,B
412859090245901	Glendale Subdivision #1	Municipal	Q,M,B
412912090231601	Merry Oaks 2nd Addition #1	Municipal	Q,M,B
412914090231601	Kingsbury Water Association #1	Municipal	Q,M,B
412915090245401	Fairacres Association #1	Municipal	Q,M,B
413004090252901	Silvis Heights Water Corp. #2	Private	Q,M,B
413006090230201	1st Avenue N. Apartments #1	Private	Q,M,B
413030090224301	East Lawn Water Association #1	Municipal	Q,M,B
413041090213201	Mobet Meadows #1	Municipal	Q,M,B
413043090234701	Price Mobile Home Park #1	Private	Q,M,B
413326090220701	Cedar Brook Estates Subdivision #1	Municipal	Q,M,B
413328090215201	Evergreen Subdivision #1	Municipal	Q,M,B
413558090102301	Hillsdale Mobile Home Park #1	Private	Q,M,B
413649090175101	Byron Hills Subdivision #2	Municipal	Q,M,B
413651090174801	Byron Hills Subdivision #3	Municipal	Q,M,B
413657090180401	Byron Hills Subdivision #6	Municipal	Q,M,B
413659090174701	Byron Hills Subdivision #4	Municipal	Q,M,B
413746090200301	Fairfield Road Addition #1	Municipal	Q,M,B
ST. CLAIR COUNTY			
383928090012101	Collinsville #11	Municipal	L,Q,M,B
SALINE COUNTY			
374327088134901	Saline Valley Conservancy District #3	Municipal	Q,M,B
374328088134701	Saline Valley Conservancy District #2	Municipal	Q,M,B
SANGAMON COUNTY			
394529089233701	Mechanicsburg-Buffalo Water Comm. #1	Municipal	Q,M,B
SCHUYLER COUNTY			
400111090312501	Rushville #6	Municipal	Q,M,B
SCOTT COUNTY			
394600090360501	Jacksonville #2	Municipal	L,Q,M,B

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

Station number	Local well name	Ownership	Type of data
SHELBY COUNTY			
391436088503801	Cowden #3	Municipal	L,Q,M
391438088503801	Cowden #2	Municipal	L,Q,M
392310088534601	Tower Hill #4	Municipal	Q,M,B
STARK COUNTY			
410539089515001	Toulon #1	Municipal	Q,M,B
410541089515101	Toulon #2	Municipal	Q,M,B
TAZEWELL COUNTY			
402222089323701	Delavan #3	Municipal	Q,M,B
402427089383201	Green Valley #1	Municipal	Q,M,B
402427089383202	Green Valley #2	Municipal	Q,M,B
402552089305401	Venado Lakes - Argyll Water Assoc. #2	Municipal	Q,M,B
402602089185101	Minier #4	Municipal	Q,M,B
402810089274701	Hickory Hills Subdivision #61	Municipal	Q,M,B
402810089274901	Hickory Hills Subdivision #62	Municipal	Q,M,B
402941089391601	South Pekin #4	Municipal	Q,M,B
403159089221801	Mackinaw #4	Municipal	L,Q,M
403211089380601	Gloraine Acres Waterworks Company #1	Private	Q,M,B
403611089371101	Groveland Township Water District #1	Municipal	Q,M,B
403612089371201	Groveland Township Water District #2	Municipal	Q,M,B
403720089371701	Marquette Heights #4	Municipal	Q,M,B
403721089371901	Marquette Heights #5	Municipal	Q,M,B
403758089370801	Creve Coeur #3	Municipal	Q,M,B
403759089370401	Creve Coeur #1	Municipal	Q,M,B
403759089370601	Creve Coeur #4	Municipal	Q,M,B
403957089331501	East Peoria #23	Municipal	Q,M,B
403958089331701	East Peoria #22	Municipal	Q,M,B
404004089333601	East Peoria #25	Municipal	Q,M,B
404004089334001	East Peoria #28	Municipal	Q,M,B
404014089343201	East Peoria #29	Municipal	Q,M,B
404016089330501	East Peoria #21	Municipal	Q,M,B
404016089330502	East Peoria #24	Municipal	Q,M,B
404108089311001	Valley View 4 & 6 Knolls #1	Municipal	Q,M,B
404119089311301	Valley View 4 & 6 Knolls #2	Municipal	Q,M,B
404125089305001	N. Tazewell Public Water District #4	Municipal	Q,M,B
404126089305001	N. Tazewell Public Water District #5	Municipal	Q,M,B
404137089322301	East Peoria #27	Municipal	Q,M,B
404138089322201	East Peoria #26	Municipal	Q,M,B

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

Station number	Local well name	Ownership	Type of data
UNION COUNTY			
373140089144201	Cobden #2	Municipal	L,Q,M
373146089145601	Cobden #1	Municipal	L,Q,M
WABASH COUNTY			
383128087423001	Allendale #1	Municipal	Q,M,B
383144087422901	Allendale #4	Municipal	Q,M,B
383146087422101	Allendale #5	Municipal	Q,M,B
383148087425001	Allendale #3	Municipal	Q,M,B
383156087423601	Allendale #6	Municipal	Q,M,B
WARREN COUNTY			
404353090404101	Roseville #9	Municipal	Q,M,B
WAYNE COUNTY			
383036088255001	Cisne #3	Municipal	Q,M,B
383042088260301	Cisne #1	Municipal	Q,M,B
383042088260302	Cisne #2	Municipal	Q,M,B
383051088253601	Cisne #4	Municipal	Q,M,B
WHITE COUNTY			
380556088201301	Enfield #5	Municipal	Q,M,B
380558088195601	Enfield #4	Municipal	Q,M,B
380559088202401	Enfield #2	Municipal	Q,M,B
380600088201901	Enfield #3	Municipal	Q,M,B
380844088001201	Crossville #3	Municipal	Q,M,B
381538087590901	Grayville #1	Municipal	Q,M,B
WHITESIDE COUNTY			
413746089470201	Tampico #2	Municipal	Q,M,B
413746089470301	Tampico #1	Municipal	Q,M,B
413952089563501	Prophetstown #4	Municipal	L,Q,M
414017089555301	Prophetstown #3	Municipal	Q,M,B
414541089420101	Rock Falls #2	Municipal	Q,M,B
414548089441301	Country Acres Mobile Home Park #3	Private	Q,M,B
414550089420301	Rock Falls #3	Municipal	Q,M,B
414551089440101	Country Acres Mobile Home Park #2	Private	Q,M,B
414554089440101	Country Acres Mobile Home Park #1	Private	Q,M,B
414622089442701	Riverside Estates Mobile Home Park #1	Private	Q,M,B

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

Station number	Local well name	Ownership	Type of data
WHITESIDE COUNTY--Continued			
414625089442501	Riverside Estates Mobile Home Park #3	Private	Q,M,B
414627089443501	Riverside Estates Mobile Home Park #2	Private	Q,M,B
414740089401802	Northern Illinois Water (Sterling) #3	Private	Q,M,B
414743089401701	Northern Illinois Water (Sterling) #4	Private	Q,M,B
414820089583201	Morrison #3	Municipal	L,Q,M
414822089583701	Morrison #1	Municipal	Q,M,B
414846089574001	Morrison #4	Municipal	L,Q,M
415142090092301	Fulton #4	Municipal	L,Q,M
415151090095401	Fulton #3	Municipal	Q,M,B
WILL COUNTY			
412950087514301	Frankfort #3	Municipal	L,Q,M,B
413238088084601	Joliet #11	Municipal	L,Q,M,B
413514088011901	Lockport #5	Municipal	L,Q,M,B
WINNEBAGO COUNTY			
421239089060301	Gem Suburban Mobile Home Park #4	Private	Q,M,B
421241089062801	Gem Suburban Mobile Home Park #1	Private	Q,M,B
421248089060901	Gem Suburban Mobile Home Park #3	Private	Q,M,B
421248089062801	Gem Suburban Mobile Home Park #2	Private	Q,M,B
421414089035101	Barrett's Mobile Home Park #1	Private	Q,M,B
421535089050301	Rockford #11	Municipal	L,Q,M,B
421837089025701	Loves Park #1	Municipal	Q,M,B
421850089025501	Loves Park #2	Municipal	Q,M,B
422718089022801	Goldie B. Floberg Center #1	Private	Q,M,B
422929089020901	South Beloit #3	Municipal	L,Q,M,B
WOODFORD COUNTY			
403824089154101	Timberline Mobile Home Park #1	Private	Q,M,B
404124089194501	Eureka #5	Municipal	Q,M,B
404125089200601	Eureka #6	Municipal	Q,M,B
405216089183401	Low Point #7	Municipal	Q,M,B
405216089183402	Low Point #8	Municipal	Q,M,B
405404089022301	Minonk #2	Municipal	Q,M,B
405406089023101	Minonk #3	Municipal	Q,M,B