



# Illinois Groundwater Protection Program

## Biennial Comprehensive Status and Self-Assessment Report

### Executive Summary



*The State of Illinois recognizes the essential and pervasive role of groundwater in the social and economic well-being of the state, and its vital importance to the general health, safety, and welfare of its citizens.*

*--Illinois Groundwater Protection Act*



*Prepared by the  
Interagency Coordinating Committee on Groundwater*







## ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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ROD R. BLAGOJEVICH, GOVERNOR

DOUGLAS P. SCOTT, DIRECTOR

217/782-3397

January 9, 2008

The Honorable Rod Blagojevich  
Governor, State of Illinois

The Honorable Members  
of the Illinois General Assembly

I am pleased to transmit the Executive Summary for the tenth Biennial Comprehensive Status and Self-Assessment Report of the Illinois Groundwater Protection Program, which has been prepared pursuant to Section 4(b)(8) of the Illinois Groundwater Protection Act. The Act created a comprehensive, prevention-based policy focused on protecting the beneficial uses of groundwater and preventing degradation.

The biennial report provides a policy perspective on groundwater quality and quantity planning, protection, and management in Illinois. The Interagency Coordinating Committee on Groundwater prepared the report with input from the Groundwater Advisory Council and the four priority regional groundwater protection planning committees.

This Executive Summary presents highlights of the comprehensive status and self-assessment for the 2006 and 2007 reporting period. For a copy of the complete report please contact the Illinois EPA's Groundwater Section at 217-785-4787. You may also download the report at <http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html>.

Very truly yours,

A handwritten signature in blue ink that reads "Doug Scott".

Douglas P. Scott  
Director



## EXECUTIVE SUMMARY

**Key Message:** Analyses of groundwater data collected from 1990 to the present shows a statistically significant increasing trend of community water supply wells with volatile organic compound detections per year. More importantly, this data show an increasing trend of groundwater degradation.

### **Background**

Since the inception of the Environmental Protection Act in 1970, it has been the policy of the State of Illinois to restore, protect, and enhance its groundwater as a natural and public resource. Groundwater has an essential and pervasive role in the social and economic well-being of Illinois, and it is vitally important to the general health, safety, and welfare of its citizens. Groundwater resources should be utilized for beneficial and legitimate purposes. Waste and degradation should be prevented, and groundwater resources should be managed to maximize benefits to the state.

The Illinois Groundwater Protection Act responds to groundwater management by emphasizing a prevention-oriented process that relies upon state and local partnerships. The Illinois Groundwater Protection Act establishes a unified groundwater protection policy by:

- Establishing a groundwater education program;
- Establishing water well protection zones;
- Providing for surveys, mapping, and assessments;
- Monitoring ambient groundwater quality;
- Establishing a regional groundwater protection-planning program;
- Establishing authority for recharge area protection;
- Requiring the establishment of two tiered groundwater quality standards; and
- Requiring technology control regulations.

The Illinois Groundwater Protection Act established the Interagency Coordinating Committee on Groundwater, which is comprised of various state agencies and is chaired by Illinois EPA's Director. The Interagency Coordinating Committee on Groundwater considers diverse stakeholder input from the Groundwater Advisory Council and the four priority regional groundwater protection planning committees in developing groundwater protection policies and programs.

The Groundwater Advisory Council, also established by the Illinois Groundwater Protection Act, is comprised of nine members appointed by the Governor from the following interests:

- Two representatives from industrial/commercial interests;
- Two representatives from environmental interests;
- One regional planning agency representative;
- One representative from agricultural interests;
- One public water supply representative;
- One water well drilling industry representative; and
- One local/county government representative.

Illinois EPA selected the four existing priority groundwater protection planning regions—northern, central, southern, and northeastern—to assist with establishing a regional groundwater protection planning program, as mandated in the Illinois Groundwater Protection Act. Each of the four regions has its own groundwater protection planning committee. These committees advocate groundwater protection practices and procedures to municipal, county, state, and other local units of government throughout their respective regions.

The Illinois Groundwater Protection Act requires the Interagency Coordinating Committee on Groundwater to report biennially to the Governor and General Assembly on groundwater quality and quantity, as well as the state's enforcement efforts. This is the tenth biennial report, and the previous nine reports are available on Illinois EPA's Web site at <http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html>.

The intended purpose of this 2008 Biennial Report is to:

- Provide a comprehensive status report on the implementation of the Illinois Groundwater Protection Act;
- Provide a self-assessment of program initiatives in relation to the goals and objectives of the program recommended in the 2006 Biennial Report; and
- Provide environmental and programmatic indicators to help measure and demonstrate program performance.

### **Volatile Organic Compound Trend Analysis**

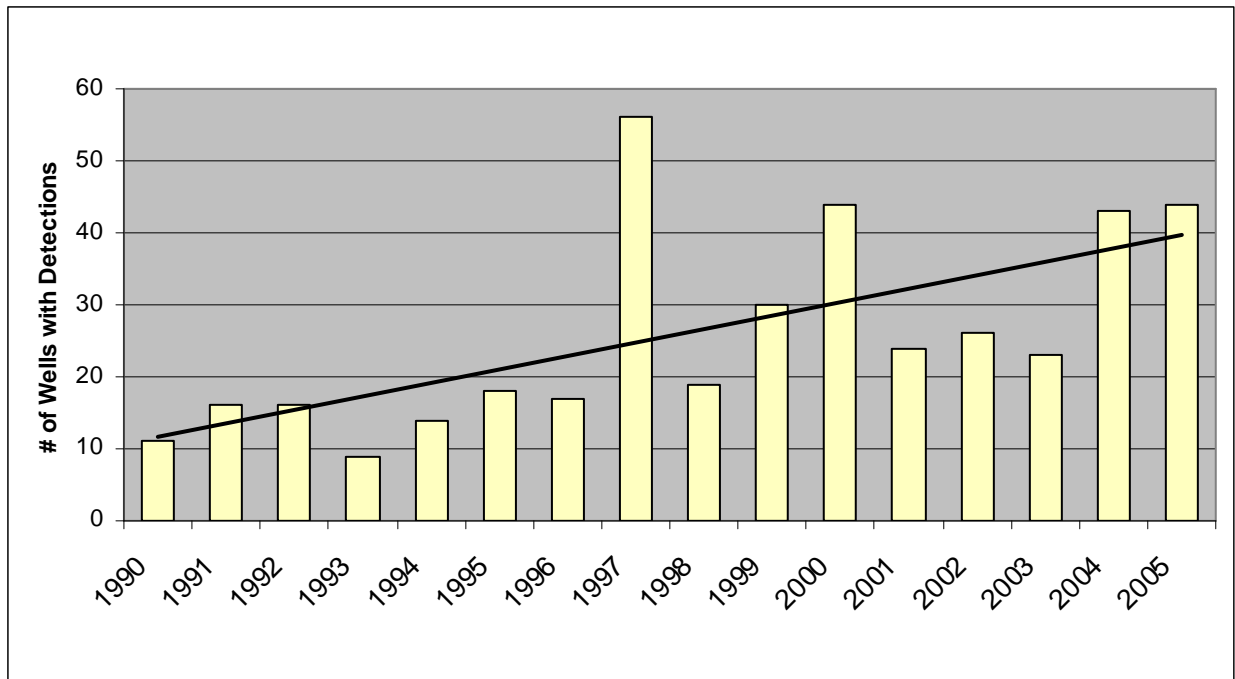
Protecting and managing groundwater are critical. Groundwater is an important natural resource that not only provides Illinois' citizens water for drinking and household uses, but also supports industrial, agricultural, and commercial activities throughout the state.

Unfortunately, industrial, agricultural, and commercial activities can often produce volatile organic compounds. They are usually produced in large volumes and are associated with products such as plastics, adhesives, paints, gasoline, fumigants, refrigerants, and dry-cleaning fluids. They can reach groundwater through many sources and routes, including leaking storage tanks, landfills, infiltration of urban runoff and wastewater, septic systems, and injection through wells. Volatile organic compounds are an important group of environmental contaminants to monitor and manage in groundwater because of their widespread and long-term use, as well as their ability to persist and migrate in groundwater.

A long-term investigation by the U.S. Geological Survey provides the most comprehensive national analysis, to date, of the occurrence of volatile organic compounds in groundwater. One of the major findings is that volatile organic compounds were detected in most aquifers throughout the nation, and were not limited to a few specific aquifers or regions.

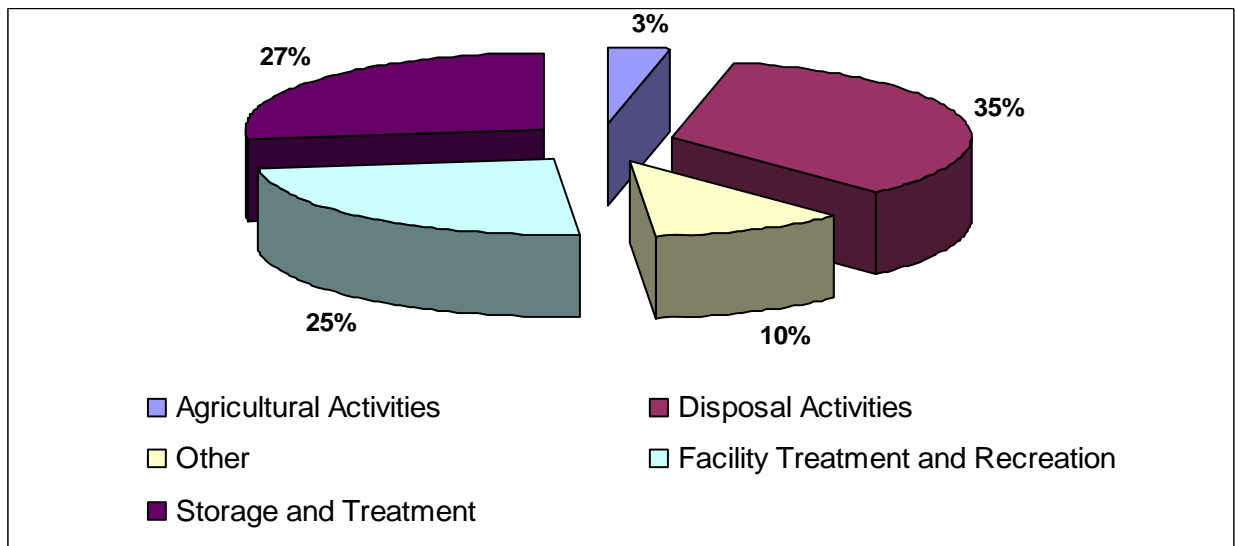
Recently, Illinois EPA used its groundwater monitoring data set (1990 to the present) to complete a volatile organic compound trend analysis. The number of wells sampled during this period declined. While year-to-year evaluation of groundwater monitoring data from community water supply wells has shown fluctuations of volatile organic compounds, analyses of this data shows a statistically increasing trend of volatile organic compound contamination in community water supply wells, as illustrated in Figure 1.

**Figure 1. Increasing number of community water supply wells with volatile organic compound detections**



In addition, Illinois EPA used its database of potential sources that have been inventoried as part of well site surveys, hazard reviews, groundwater protection needs assessments, source water assessments, and other special field investigations to determine the most threatening potential contamination sources associated with community water supply wells with volatile organic compound detects. The most threatening potential contamination sources are shown in Figure 2.

**Figure 2. Most threatening potential contamination sources in community water supply wells with volatile organic compound detections**





An additional concern is that high volatile organic compound levels may be found in nearby private drinking water wells. To that end, Illinois EPA continues to implement legislation and rulemaking that were developed and adopted in 2002. The resultant Groundwater Contamination Response Strategy sets forth procedures to be used to notify local private well owners of existing and potential groundwater contamination of private wells by volatile organic compounds detected in community water supply wells. The facility sites that were reviewed through 2007 are listed below:

- Adams County: Mill Creek
- Boone County: Belvidere
- Cass County: Beardstown
- Clark County: Union-York
- Cook County: South Chicago Heights
- DeKalb County: Sandwich
- DuPage County: Downers Grove
- Henry County: Kershaw Mobile Home Park
- Jo Daviess County: Scales Mound
- Kankakee County: Momence
- Kendall County: Plano
- Lake County: Island Lake
- Madison County: Edwardsville
- McHenry County: Crystal Lake, Fox River Grove, Harvard, Hebron
- Menard County: Petersburg
- Montgomery County: Nokomis
- Ogle County: Byron
- Peoria County: Princeville
- Pike County: Hull
- Rock Island County: Milan
- Stephenson County: Freeport
- Tazewell County: East Peoria
- Whiteside County: Morrison
- Will County: New Lenox
- Winnebago County: Loves Park, Six Oaks Mobile Home Park
- Woodford County: Roanoke

In conclusion, Illinois groundwater resources are being degraded. Degradation occurs based on the potential or actual diminishment of the beneficial use of the resource. When contaminant levels are detected or predicted to be above concentrations that cannot be removed by ordinary treatment techniques, applied by the owner of a private drinking water system well, potential or actual diminishment occurs.

The results of the groundwater data trend analysis show the importance of doing long-term monitoring such that trend analysis can be performed. More importantly, this data shows an increasing trend of groundwater degradation. Illinois EPA will continue to evaluate this groundwater monitoring data to determine the causes and potential sources of this trend.



## **Summary of Results**

The 2008 Biennial Report provides additional detail for the tables contained in this Executive Summary. These tables provide highlights of the results based on the 2006 Biennial Report objectives, and are organized by the following chapters:

- Chapter I. Interagency Coordinating Committee on Groundwater Operations
- Chapter II. Groundwater Advisory Council Operations
- Chapter III. Education Program for Groundwater Protection
- Chapter IV. Groundwater Evaluation Program
- Chapter V. Right-to-Know Initiatives
- Chapter VI. Groundwater Quality Standards and Technology Control Regulations
- Chapter VII. Wellhead Protection Program
- Chapter VIII. Regional Groundwater Protection Planning Program
- Chapter IX. Non-Community and Private Well Program
- Chapter X. Groundwater Quality Protection Recommendations and Future Directions

## CHAPTER I. INTERAGENCY COORDINATING COMMITTEE ON GROUNDWATER OPERATIONS

**Key Message:** Many states' groundwater protection programs are not coordinated. The Interagency Coordinating Committee on Groundwater has been active since 1988.

Objectives	Results
Assist the Groundwater Advisory Council in the review and development of recommendations pertaining to groundwater quality and quantity issues.	A joint Interagency Coordinating Committee on Groundwater/Groundwater Advisory Council meeting was held to obtain input on draft revisions to the Illinois Pollution Control Board's groundwater standards. Joint meeting presentations provided updates from the Illinois Department of Natural Resources on water planning quantity initiatives.
Initiate a policy discussion regarding prevention versus remediation.	The Interagency Coordinating Committee on Groundwater, Groundwater Advisory Council, and regional planning committees held a dialogue discussion with U.S. EPA Region 5 and other state groundwater managers. The policy discussion was published on a CD and is available from Illinois EPA.
Continue the policy discussion concerning the integration of wellhead protection areas with Tiered Approach for Corrective Action Objectives. The Site Remediation Advisory Committee recommended that the problem be documented and that the wellhead protection area modeling process be peer reviewed.	The Interagency Coordinating Committee on Groundwater developed a strategy to respond to the two Site Remediation Advisory Committee recommendations. First, a paper was submitted to the National Ground Water Association that documented the increasing trend of volatile organic compounds occurring in community water supply wells. Secondly, Illinois' wellhead protection area definition and modeling process was codified under Illinois Pollution Control Board regulations. Furthermore, a national dialog with other states was sponsored by the Ground Water Protection Council. This dialog determined that most states recognize wellhead protection areas in risk-based remediation programs.
Continue to enhance coordination between Illinois EPA's Bureau of Water and Bureau of Land remediation programs.	Illinois EPA continues to implement the Groundwater Contamination Response Strategy to existing and potential groundwater contamination of private wells by volatile organic compounds. To date, notification was provided to 30 sites and Illinois EPA follow-up investigations are being

**INTERAGENCY COORDINATING COMMITTEE ON  
GROUNDWATER OPERATIONS (cont'd)**

<b>Objectives</b>	<b>Results</b>
Continue to review and update the Implementation Plan and Regulatory Agenda.	The Interagency Coordinating Committee on Groundwater provided input on four regulations/ rules that were proposed to the Illinois Pollution Control Board during this two-year period. The Right-to-Know community relations and well survey regulations were adopted by the Illinois Pollution Control Board, and cost recovery rules were adopted by the Joint Committee on Administrative Rules. Radionuclide release reporting regulations were proposed to the Illinois Pollution Control Board, which adopted First Notice for these regulations on December 6, 2007. In addition, proposed revisions to the groundwater quality standards were developed, and multiple stakeholder outreach meetings were held.
Work with the Groundwater Advisory Council and regional the regional groundwater protection and planning committees to sponsor a Groundwater Protection Policy Forum.	This objective was not accomplished; however, planning for a Groundwater Protection Policy Forum to be held in 2008 has been implemented.
Continue to hold quarterly meetings.	This objective was not accomplished.
Provide liaison for the Groundwater Advisory Council.	Meetings of the Interagency Coordinating Committee on Groundwater were held jointly with the Groundwater Advisory Council.

**INTERAGENCY COORDINATING COMMITTEE ON  
GROUNDWATER OPERATIONS (cont'd)**

<b>Objectives</b>	<b>Results</b>
Enhance Web-based educational materials.	<p>Illinois EPA's Web site, <a href="http://www.epa.state.il.us/water/groundwater/index.html">http://www.epa.state.il.us/water/groundwater/index.html</a>, was enhanced to provide additional information on the Interagency Coordinating Committee on Groundwater, including nine previously-published Illinois Groundwater Protection Act Biennial Reports, various educational materials, and a contact directory.</p> <p>The Illinois State Water Survey created a new Web page devoted to domestic wells, <a href="http://www.sws.uiuc.edu/gws/domesticwell.asp">http://www.sws.uiuc.edu/gws/domesticwell.asp</a>. A Web page, <a href="http://www.sws.uiuc.edu/wsp/watersupply.asp">http://www.sws.uiuc.edu/wsp/watersupply.asp</a>, was created for water supply planning and current activities pursuant to Executive Order #1-2006, "Executive Order for the Development of State and Regional Water-Supply Plans."</p> <p>The Illinois State Geological Survey updated its hydrogeology Web site, <a href="http://www.isgs.uiuc.edu/research/hydrogeology.shtml">http://www.isgs.uiuc.edu/research/hydrogeology.shtml</a>, to include current projects, feature articles, related links, and the "2007 Three-Dimensional Geological Mapping for Groundwater Applications" workshop. The Illinois State Geological Survey's educational outreach Web site, <a href="http://www.isgs.uiuc.edu/education/education.shtml">http://www.isgs.uiuc.edu/education/education.shtml</a>, includes links related to groundwater and a variety of other geologic topics, teacher resources, and materials that can be downloaded for free.</p>
Assist in implementation of the <i>Illinois Generic Management Plan for Pesticides in Groundwater</i> .	The Interagency Coordinating Committee on Groundwater provided input to a revised plan that was submitted to, and approved by, U.S. EPA.
Evaluate the development of Class III: Special Resource Groundwater for Dedicated Nature Preserves.	No requests were submitted for review.
Review regulated recharge area proposals.	No proposals were submitted for review.

## CHAPTER II. GROUNDWATER ADVISORY COUNCIL OPERATIONS

**Key Message:** Stakeholder input is a key to implementation of effective groundwater protection programs.

Objectives	Results
Review and make recommendations regarding groundwater issues and policies.	<p>Under the leadership of Illinois Department of Natural Resources, the Groundwater Advisory Council participated in discussions for implementing Executive Order #1-2006, “Executive Order for the Development of State and Regional Water Supply Plans.”</p> <p>The Groundwater Advisory Council established a special Right-to-Know Notification Subcommittee that developed a resolution on the methods of providing notice as required under Section 25d-3 of Public Act 94-314. This resolution may be found on Illinois EPA’s Right-to-Know Web page at <a href="http://www.epa.state.il.us/community-relations/right-to-know/index.html">http://www.epa.state.il.us/community-relations/right-to-know/index.html</a>.</p>
Conduct policy-related meetings.	The Groundwater Advisory Council held three meetings to discuss water quality and quantity initiatives.
Provide input to programs, plans, regulatory proposals, and reports, as appropriate.	The Groundwater Advisory Council focused on providing input to the four regulations that were developed during this two-year period. Two have already been adopted; a third is at First Notice. Further, the Groundwater Advisory Council Right-to-Know Notification Subcommittee developed a resolution that satisfied the Right-to-Know law requirements. The Groundwater Advisory Council sponsored special stakeholder outreach meetings for the regulations that were developed.

### CHAPTER III. EDUCATION PROGRAM FOR GROUNDWATER PROTECTION

**Key Message:** Illinois EPA staff shortages and cuts to the groundwater education program at Illinois Department of Natural Resources have made it difficult to support local efforts to protect groundwater as required under the Illinois Environmental Protection Act.

Objectives	Results
Continue to develop and improve the Web-based information ordering and distribution system.	<p>The Illinois Department of Natural Resources Web site offers a number of educational resources for teachers and kids at <a href="http://www.dnr.state.il.us/lands/education/index.htm">http://www.dnr.state.il.us/lands/education/index.htm</a>.</p> <p>The Illinois State Water Survey has scanned all historical water survey reports and placed them online at <a href="http://www.sws.uiuc.edu/pubs/isearch.asp">http://www.sws.uiuc.edu/pubs/isearch.asp</a>.</p> <p>The Illinois State Geological Survey has enhanced its Web site for distributing maps and data related to groundwater and other geologic topics, for online publications, and for ordering maps and publications at <a href="http://www.isgs.uiuc.edu/maps-data-pub/maps.html">http://www.isgs.uiuc.edu/maps-data-pub/maps.html</a>. A Web-based ordering and distribution system is being implemented.</p>
Integrate groundwater education efforts into other state environmental planning and protection programs.	The Governor's state water supply planning initiative, pursuant to Executive Order #1-2006, called for the creation of two regional stakeholder planning committees. A water supply planning Web page has been developed to provide a variety of information to users, especially the stakeholder planning committees. This information may be found at <a href="http://www.sws.uiuc.edu/wsp/">http://www.sws.uiuc.edu/wsp/</a> .
Work toward enhancing the groundwater protection education resources on a priority basis.	The Illinois State Water Survey and the Illinois State Geological Survey continue to provide groundwater education services to teachers, students, and all sectors of the public.

## CHAPTER IV. GROUNDWATER EVALUATION PROGRAM

**Key Message:** Change occurs as a result of leadership and cooperation. Kane County and McHenry County are champions of change.

Objectives	Results
Evaluate causes and potential sources of increasing volatile organic compound trend.	Illinois EPA has evaluated the inventoried potential contamination sources' data from well site surveys and determined the most statistically threatening potential contamination sources. Additionally, Illinois EPA's Bureau of Land Site Remediation Referral Group has been doing additional field work to determine sources of contamination. National dialog was also initiated with other states and U.S. EPA at the annual Ground Water Protection Council conference.
Work toward supporting the Illinois Water Inventory Program.	The Illinois Water Inventory Program is being supported by the Illinois State Water Survey through the state water supply planning initiative, pursuant to Executive Order #01-2006.
Continue to improve the source water assessment and protection system geographic information system to include more interactive features.	A database development contract was completed to enhance the source water assessment and protection system geographic information system database, referred to as Proteus.
Continue to share geographic information system coverages in an electronic format and continue to automate the groundwater resource database for Illinois.	Illinois EPA continued to update the source water assessment and protection Internet geographic information system, in conjunction with Illinois Department of Natural Resources, Illinois State Water Survey, Illinois State Geological Survey, and U.S. Geological Survey. In 2006, nearly 140,000 visitors accessed over two-million Illinois Natural Resources Geospatial Data Clearinghouse Web pages. A Web search on the keywords "Illinois" and "GIS" offers the Illinois Clearinghouse as the first Web site returned at Google, Yahoo, AOL, and Ask.com. A project to enable access to 2005 digital orthoimagery collections prompted requests from Google, Mapquest, Microsoft Earth, Navteq, the Nature Conservancy, the National Weather Service, and FutureGen partner agency representatives.



**GROUNDWATER EVALUATION PROGRAM (cont'd)**

<b>Objectives</b>	<b>Results</b>
<p>Continue to conduct groundwater assessments and share the information through regular updates and completed reports.</p>	<p>The Illinois State Geological Survey ILWATER Web site provides Internet access to more than 275,000 water-well and other borehole records along with an extensive database of geological information. Approximately 2,400 visitors per month accessed the website during 2007. Groundwater assessments continued in northeastern Illinois, Metro East St. Louis, and the Mahomet Aquifer region.</p> <p>The Midwest Technology Assistance Center sponsored adequacy assessments for 12 small communities in 2006 and for 24 in 2007. Midwest Technology Assistance Center also sponsored research on drought planning for small communities in the Midwest. Information for both of these topics may be found on the Midwest Technology Assistance Center Web site at <i>http://mtac.sws.uiuc.edu</i>.</p> <p>Many activities are conducted in cooperation with the Illinois State Geological Survey, including assessment of groundwater quality for arsenic, radium and nutrients, as well as groundwater recharge assessment, groundwater modeling, and nature preserve protection activities.</p> <p>Kane County's effort to comprehensively assess the geologic and groundwater resources and to integrate water resources into county-wide planning is a role model for the state. McHenry County built on their assessments by hiring a groundwater coordinator, who continues to move toward implementation of planning efforts.</p>
<p>Continue to utilize innovative and cost-effective methods to implement statewide groundwater quality monitoring.</p>	<p>DuPage County implemented a model effort county-wide assessment of private drinking water system wells using a random selection process. As a result of this effort, private wells contaminated with volatile organic compounds were discovered and connected to the municipal water supply.</p>
<p>Continue to assess and evaluate emerging contaminants of concern.</p>	<p>Illinois Department of Agriculture has continued to assess pesticide transformation products in its dedicated monitoring well network. Further, U.S. Geological Survey has also monitored for emerging compounds (e.g., pharmaceuticals) in groundwater in Illinois under the National Water Quality Assessment program.</p>

<b>GROUNDWATER EVALUATION PROGRAM (cont'd)</b>	
<b>Objectives</b>	<b>Results</b>
Continue to implement and improve overall groundwater quality indicators.	Illinois EPA has improved the overall indicators by conducting the first long-term trend analysis of volatile organic compounds in community water supply wells.

## CHAPTER V. RIGHT-TO-KNOW INITIATIVES

**Key Message:** Prevention results from a change in behavior. Before a change in behavior can occur there must first be awareness.

Objectives	Results
Obtain input from the Groundwater Advisory Council on notice methods and associated rules.	This was accomplished, as described in Chapter II, Groundwater Advisory Council Operations.
Continue to issue community water supply well-centric (triggered by detections in public water supply wells) notices in coordination with Illinois Department of Public Health.	Fourteen well-centric notifications were sent out during this reporting period.
Implement the evaluation and notification requirements under the Right-to-Know law.	The notifications provided are listed under the Right-to-Know Web page at <a href="http://www.epa.state.il.us/right-to-know/">http://www.epa.state.il.us/right-to-know/</a> .
Assist in the development and proposal of Right-to-Know cost recovery, well survey, and community relations work plan rules.	The Illinois Pollution Control Board and Joint Committee on Administrative Rules adopted the final regulations and rules on September 29, 2006, and October 23, 2007, respectively.
Assist with training both Illinois Department of Public Health and local health departments on Right-to-Know and use of the Internet geographic information system.	Illinois EPA conducted training sessions at the Kane County and Winnebago County Health Departments. Illinois EPA also developed a Right-to-Know and Internet geographic information system training CD that was distributed to local and regional health departments through Illinois Department of Public Health. The Illinois Environmental Regulatory Group also sponsored two successful Right-to-Know workshops for business representatives and consultants, in cooperation with Illinois EPA staff.

## CHAPTER VI. GROUNDWATER QUALITY STANDARDS AND TECHNOLOGY CONTROL REGULATIONS

**Key Message:** Groundwater standards protect not only public health, but also the beneficial uses of the resource. Nondegradation of beneficial uses occurs when groundwater contaminants cannot be removed by ordinary treatment techniques employed by a private drinking water system owner.

Objectives	Results
Evaluate the need to develop Class III: Special Resource Groundwater Standards.	No new scientific basis has been developed to support new standards specific to Class III groundwater.
Continue to: (1) develop proposed groundwater quality standards for emerging contaminants of concern and contaminants detected in groundwater; (2) implement and integrate the groundwater quality standards into environmental programs; and (3) update and amend groundwater standards to parallel the drinking water standards adopted by U.S. EPA.	Illinois EPA evaluated groundwater data for approximately 300 groundwater parameters. The data set evaluated spanned from April 1984 to April 2004.  Illinois EPA has also evaluated confirmed groundwater contaminants at various cleanup sites. Illinois EPA is proposing a groundwater standard for perchlorate.  Illinois EPA is proposing an amendment to the existing groundwater standard for arsenic, based on the revised federal drinking water standard.
Continue to implement preventive notice and response programs, and integrate with environmental programs.	Significant public concern and national response to tritium leaks from nuclear power plants led to new radionuclide release reporting legislation and enforcement efforts focused on the protection of threatened beneficial uses. New release reporting regulations have also been developed and proposed to the Illinois Pollution Control Board.
Continue to implement the technology control regulations and improve a database for tracking and evaluating compliance data.	The Proteus database project assists with meeting this objective.

## CHAPTER VII. WELLHEAD PROTECTION PROGRAM

**Key Message:** Source water protection provides a multi-barrier approach to protecting drinking water. A multi-barrier approach is essential given the emerging contaminants (viruses, pharmaceuticals, endocrine disruptors, herbicide transformation products) that may not be removed by treatment.

Objectives	Results
Continue the discussion with the Groundwater Advisory Council and other stakeholders regarding the integration of wellhead protection areas as a factor in the Tiered Approach to Corrective Action.	Efforts have focused on responding to two Site Remediation Advisory Committee recommendations—that problems be documented and that the wellhead protection area modeling process be peer reviewed.
Develop new Illinois EPA source water protection criteria and regulations.	Draft regulatory revisions were prepared, but are still under development. The American Water Works Association adopted a new source water protection standard. Illinois EPA is coordinating with the Illinois Section of the American Water Works Association on the best way to promote this new standard.
Continue integration of Illinois EPA’s Groundwater and Field Operations Sections’ programs for technical assistance in source water protection and engineering evaluations (sanitary surveys).	A new database that integrates completed electronic engineering evaluations as a strategy for updating source water assessments has been developed, but not fully implemented. Illinois EPA’s Groundwater Section staff is being cross-trained to conduct source assessments and sanitary surveys.
Continue to publish wellhead protection and assessment data at <a href="http://www.epa.state.il.us/water/groundwater/source-water-quality-program.html">http://www.epa.state.il.us/water/groundwater/source-water-quality-program.html</a> .	Source water assessments have been conducted and/or revised for 37 community water supplies and 260 non-community water supplies. Moreover, work is under way on 30 additional non-community water supplies.
Increase the percentage of intensive groundwater protection management for community water supply wells.	Groundwater protection management has not substantially increased within delineated wellhead protection areas during this two-year period.

<b>WELLHEAD PROTECTION PROGRAM (cont'd)</b>	
<b>Objectives</b>	<b>Results</b>
Continue integration and implementation of the Wellhead Protection Program under the Safe Drinking Water Act's alternative monitoring program.	A total of 561 community water supplies have implemented local wellhead protection program elements and met the requirements for obtaining a full or partial Safe Drinking Water Act monitoring waiver for volatile organic compounds and synthetic organic compounds. This total includes 671 treatment application points with a full monitoring waiver and another 103 treatment application points with a volatile organic compound-only or synthetic organic compound-only Safe Drinking Water Act monitoring waiver.
Continue the delineation of recharge areas for community water supplies using reasonably available information.	Delineation was completed for five new community water supplies, and 23 community water supply wellhead protection area delineations were updated.
Continue to modify community water supply well construction permit application procedures to include collection of information on potential sources and routes, well logs, pumping tests, and chemical analyses.	Draft revisions to the application forms and regulations were developed, but have not been finalized.
Evaluate efforts to expand the Illinois Water Well Decommissioning Program.	The Illinois Water Well Decommissioning Program has been expanded to allow ten well sealing projects in each local soil and water conservation district and to permit the sealing of abandoned irrigation wells. In addition, a special projects category has been adopted through the Conservation 2000 Program for funding high
Promote the new Source Water Protection Plan Guidance.	An interactive CD entitled "Guide to Developing a Source Water Protection Program in Illinois" was developed with assistance from the Montana Water Center, through a grant from the Midwest Technology Assistance Center. The CD has been demonstrated at several professional water supply conferences and workshops, including those of the American Water Works Association-Illinois Section, Illinois Potable Water Supply Operators Association, and the Illinois Rural Water Association. Water supply operators completing the guidance portion of the CD can earn up to 7.5 renewal education credit hours. In addition, the source water protection CD is posted on Illinois EPA's Web site.

## CHAPTER VIII. REGIONAL GROUNDWATER PROTECTION PLANNING PROGRAM

**Key Message:** A public educated about groundwater will protect groundwater. The regional groundwater protection planning committees continue to implement programs and assist with targeting local contacts and interest groups to advocate groundwater protection practices and procedures. However, these programs are very time consuming and significant staff resources and funding is needed to maintain these programs.

Objectives	Results
<p>Maintain current committee flexibility and assist with conducting and supporting both new initiatives and follow-up efforts for local and regional groundwater protection programs.</p>	<p>Illinois EPA’s Groundwater Section continues to coordinate with the regional groundwater protection planning committees to implement programs and assist with targeting local contacts and interest groups. These efforts advocate groundwater protection practices and procedures to municipal, county, state, and other local units of government throughout their respective regions.</p> <p>During the past two years, Illinois EPA and members of the four regional groundwater protection planning committees have met with local stakeholders to encourage the development of groundwater protection programs, goals, and objectives to implement activities to protect community water supply recharge areas. These goals and objectives are useful in prioritizing and developing groundwater protection programs such as annual fields days, workshops, well-sealing demonstrations, and promoting and participating in the national Groundwater Guardian Program.</p>



## CHAPTER IX. NON-COMMUNITY AND PRIVATE WELL PROGRAM

**Key Message:** Volatile organic compounds were detected in about half of the 2,401 domestic drinking water wells in a recent U.S. Geological Survey study. This finding shows the wells are more vulnerable to low-level contamination by volatile organic compounds than previously thought, according to U.S. Geological Survey scientists.

Objectives	Results
Continue to implement the Wellhead Protection Program and assist with implementing the technology control and groundwater quality standards regulations.	At the time of inspection of non-community water supplies, Illinois Department of Public Health and local health departments inspect the area surrounding the wellhead for potential sources of contamination.
Continue the source water assessments for new non-community water supplies.	Work has begun on the source water assessments for 168 non-community water supplies that have become active since January 1, 2006.
Continue geographic information system coverage for all new non-community public water systems.	Digitizing the locations of all existing non-community public water supply wells has been completed. The process of digitizing the locations of all new non-community public water supply wells will continue.
Continue certification training of non-transient non-community water supplies operators.	Training, certification, and recertification of operators is ongoing. As of July 2007, 472 operators are currently certified to operate the 382 active non-transient non-community water supplies.
Continue to inspect and perform laboratory analyses on water samples collected from non-community water supplies.	Inspections continue to be performed at least once every two years. All non-community public water supplies continue to be sampled at least yearly for coliform bacteria and nitrates. Non-transient non-community water supplies continue to be sampled for volatile organic compounds, synthetic organic compounds, and inorganic chemicals, based on the requirements of the Safe Drinking Water Act.
Continue to issue permits for the construction, modification, or extension of existing non-community water supplies.	During 2006 and 2007, Illinois Department of Public Health issued approximately 140 permits for the construction, modification, or an extension of an existing non-community water supply.
Continue the issuance of permits for all types of water wells with the exception of community water supply wells.	During 2006 and 2007, Illinois Department of Public Health and local health departments issued approximately 11,973 water well construction permits.

**NON-COMMUNITY AND PRIVATE WELL PROGRAM (cont'd)**

<b>Objectives</b>	<b>Results</b>
Continue to update the Illinois Water Well Construction and Pump Installation Codes to reflect new technology, industry, and public health standards.	Illinois Department of Public Health has proposed amendments to the Illinois Water Well Construction and Pump Installation Codes.
Continue supporting education training sessions for licensed water well and pump installation contractors.	During 2006 and 2007, the Illinois Association of Groundwater Professionals presented nine, six-hour continuing education sessions.
Continue to conduct training sessions pertaining to both the non-community water supplies and private water programs for local health department and Illinois Department of Public Health water program staff.	During 2006 and 2007, Illinois Department of Public Health and the Illinois Environmental Health Association presented 17 training sessions for water program staff from Illinois Department of Public Health and 96 local health departments.
Continue implementation of public notification for private water supply potential contamination.	From July of 2002 through October of 2007, Illinois Department of Public Health and local health departments processed 38 public notices of the owners of any private, semi-private, or non-community public water supply wells within potentially affected areas of concern.
Continue conversion of the Illinois Department of Public Health database onto the Safe Drinking Water Information System.	Inventory, sampling and violation data continues to be entered into the Safe Drinking Water Information System. In addition, compliance with Safe Drinking Water Act requirements is now being determined using Safe Drinking Water Information System.

## **CHAPTER X. GROUNDWATER QUALITY PROTECTION RECOMMENDATIONS AND FUTURE DIRECTIONS**

The following recommendations are based on the results in the above tables. These appear in Chapter X, Groundwater Quality Protection Recommendations and Future Directions, in the main body of the 2008 Biennial Report.

### Interagency Coordinating Committee on Groundwater Operations

- Continue to review and update the Implementation Plan and Regulatory Agenda.
- Work with the Groundwater Advisory Council and regional groundwater protection committees to sponsor a Groundwater Protection Policy Forum.
- Assist the Groundwater Advisory Council in the review and development of recommendations pertaining to groundwater quality and quantity issues.
- Continue the policy discussion regarding prevention versus remediation.
- Continue the policy discussion concerning the integration of wellhead protection areas with Tiered Approach for Corrective Action Objectives. The Site Remediation Advisory Committee recommended that the problem be documented and that the wellhead protection area modeling process be peer reviewed.
- Establish a subcommittee led by Illinois Department of Public Health to discuss tracking and registering groundwater monitoring wells.
- Establish a subcommittee to discuss registering closed-loop heat pump wells and licensing drillers.

### Groundwater Advisory Council Operations

- Review and make recommendations regarding groundwater issues and policies.
- Provide input to programs, plans, regulatory proposals, and reports as appropriate.

### Education Program for Groundwater Protection

- Market the new source water protection standards.
- Initiate efforts to fill critical staff vacancies.

### Groundwater Evaluation Program

- Continue to conduct a program of basic and applied groundwater research programs that allow decisions to be made on sound scientific principles.
- Strive to implement monitoring for emerging contaminants.

### Right-to-Know Initiatives

- Continue efforts of providing notification for off-site potable resource groundwater users threatened by degradation of the groundwater's beneficial uses.

### Groundwater Quality Standards and Technology Control Regulations

- Continue with proposed changes to the groundwater quality standards and continue efforts of protecting future beneficial uses of drinking water.

### Wellhead Protection Program

- Amend rules to require the development of source water protection planning (unless already developed) considering the current state of the art.
- Implement principles developed under the national Source Water Protection Collaborative (e.g., “Marketing for Change”) as part of outreach efforts.

### Regional Groundwater Protection Planning Program

- Continue to assist and advocate local groundwater protection, education, and marketing.

### Non-Community and Private Well Program

- Continue to implement the Wellhead Protection Program, and assist with implementing the technology control and groundwater quality standards regulations.
- Continue the source water assessments for new non-community public water supplies.
- Continue certification training of non-transient, non-community public water supply operators.
- Continue to inspect and perform laboratory analyses on water samples collected from non-community public water supplies.
- Continue to issue permits for the construction, modification or extension of existing non-community public water supplies.
- Continue the issuance of permits for all types of water wells with the exception of public water supply wells.
- Continue to update the Illinois Water Well and Pump Installation Codes to reflect new technology, industry, and public health standards.
- Continue supporting education training sessions for licensed water well and pump installation contractors.
- Continue to conduct training sessions pertaining to both the non-community public water supply and private-water program for local health departments and Illinois Department of Public Health.
- Continue to completely implement the Safe Drinking Water Information System database for compliance monitoring of non-community public water supplies.
- Continue the implementation of public notification for private water supply potential contamination.