



IGA NEWS

FROM THE CHAIR

Volume 20, No. 2
Fall 2004

Contents

- IGA News
- What's Happening in Illinois Groundwater
- Agency and Regulatory Update
- Focus on Illinois Groundwater Education
- Bits and Pieces
- Fall Meeting Details

2004 Officers

Chair: Randy Locke,
Illinois State Water Survey

Vice Chair: Erik Spande,
CH2M Hill

Director: Dan Horvath,
Resource Consulting, Inc.

Director: Steve van der Hoven,
Illinois State University

Secretary: Sara Williams,
Weaver Boos Consultants

Treasurer: Steve Bennett,
Western Illinois University

Editor: Erik Spande,
CH2M Hill

Student Director: Dean Ekberg,
Northern Illinois University

It seems unbelievable that it is fall already. But it is unmistakable... the leaves are turning, the temperatures are dropping and it's meeting time again! I'm pleased to report that since the last meeting the Executive Committee has been diligently preparing for the fall meeting, as well as, working on high priority issues.

As noted in the last newsletter, improving our membership numbers is a top priority. We've been taking several steps to strengthen membership and the Association. The response to the "invitations" sent to Illinois Professional Geologists was excellent. We had many new attendees at the spring meeting and shortly thereafter we tallied more than 30 first-time members.

In August, I proposed that a standing membership committee be formed and the Executive Committee approved. The committee is getting ready for its first meeting. Its purpose is to "make recommendations to the IGA chair regarding issues of membership" and "act on recommendations approved by the Executive Committee." I anticipate it will make a significant impact in identifying and addressing membership issues.

We're also very proud to announce the new [IGA Directory of Expertise](#). It is an on-line directory that is viewable by members and non-members alike. However, a listing with information about you, your company and your areas of expertise is a benefit exclusively reserved for members. The directory is intended to help when you want to look up an IGA contact, find a potential collaborator, seek advice, or just learn more about each other's abilities.

To better connect the IGA with other Illinois associations, I recently requested that we be added to the [Illinois Water Alliance](#). The group is organized by the [Illinois Section of the American Water Works Association](#) and currently consists of 12 organizations. As their website states, it is "an affiliation of water and wastewater associations in Illinois formed to share information on planned events and promote cooperation."

We've made solid progress this year ensuring we are more effective and that our strengths are known inside and outside of the Association. Please help us grow by bringing a colleague to the next meeting and introducing them to the IGA. They'll likely see that getting involved is a truly rewarding experience.

Have a great fall and I look forward to seeing you (and your colleague) at our next top-notch meeting at Fermi.

Randy Locke, P.G.
Illinois State Water Survey

FALL 2004 IGA MEETING AT FERMILAB

The Fall Meeting of the Illinois Groundwater Association will be held at the [Fermi National Laboratory](#) in Batavia, Illinois on Wednesday, November 17, 2004. On-site registration with coffee and rolls begins at 8:15 a.m. and the technical program will begin at 9:00 a.m.

Topics on the agenda include arsenic treatment options for complying with new drinking water standards, anthropogenic constituents in shallow groundwater of the Upper Illinois River Basin, accessibility of ISWS groundwater data using GWINFO and ARC-IMS, hydrocarbon remediation at Hartford, Illinois, phytoremediation at Argonne National Laboratory, nitrate transport in the vadose and shallow saturated zone, a regulatory update from the Illinois EPA, an update on well construction code and much more! At the end of the meeting there will be time for an informal Q & A to learn more about the research conducted at Fermi. Additional details and a complete agenda are given later in this newsletter.

SPRING 2004 IGA MEETING AT STARVED ROCK

The Spring 2004 was held at the ever scenic Starved Rock State Park on April 22nd. We were very lucky to have terrific weather, which made one of the highlights – a 90 minute field trip at Starved Rock led by Bob Vaiden from the Illinois State Geological Survey – even more enjoyable. The spring flowers were in full bloom, and we even got a lesson on the interaction of geology on the native flora! Topics at the meeting were diverse and included environmental statistics, Upper Illinois River water quality, horizontal drilling impacts to an Illinois fen, results from a survey on groundwater issues by the National Ground Water Association, statewide groundwater use to yield assessments, and the effects of landfill gas on groundwater. Attendance was excellent, and if you weren't able to make it you really missed a treat!

IGA STUDENT RESEARCH GRANTS PROGRAM

A primary goal of the Illinois Groundwater Association is to foster scholarship in the science of groundwater. One way we support this effort is through our IGA Student Research Grant Program. Applications are invited for IGA student research grants for 2005. The IGA annually awards one or more modest grants (typically \$150 - \$300) to help support student research in groundwater in Illinois. Any undergraduate or graduate student registered for full- or part-time study at an accredited college or university in Illinois is eligible to apply. The 2005 deadline is April 30th, but we encourage you to submit your applications early. Application forms and guidelines can be obtained [online](#) or from:

[Edward Mehnert](#)
IGA Grants Coordinator
Illinois State Geological Survey
615 East Peabody Drive
Champaign, IL 61820
217/244-2765 Fax 217/244-2785

2004 IGA DUES REMINDER

It's not too late to pay your 2004 dues or plan ahead to renew for 2005. Please print, complete, and mail this information along with your registration fee to Sara Williams at the address below. IGA membership dues are \$15, and the student membership is \$5. Membership renewal for each calendar year is payable at the time of the Spring Meeting and is available to anyone interested in groundwater resources in Illinois. **Please make checks payable to the Illinois Groundwater Association.**

COST

Renew Membership	\$15	Name: _____
New Membership	\$15	Position: _____
Student	\$5	Employer: _____
		Address: _____
		Phone: _____ Fax: _____
		E-mail: _____

Clip form & mail to:

Sara Williams, Weaver Boos Consulting, Inc., 1901 Butterfield Rd., Ste. 800,
Downers Grove, IL 60515, Phone: 630/968-7777, Fax: 630/968-7769

THREE ILLINOIS STUDENTS RECEIVE IGA GRANTS

Over the summer, the Illinois Groundwater Association awarded grants to three deserving graduate students from Illinois universities. The IGA is pleased to support groundwater research, and hopes to increase this support in the future as its budget permits.

2004 IGA Student Research Grant Recipients

Student	School	Project Title
Kathleen Bryant Grant - \$295	Northern Illinois University	Effects of long-term exposure to halogenated compounds on the chemistry and matrix structure of clays in northern Illinois
Amy Schwarz Grant - \$400	Northern Illinois University	A study of the effects of precipitation on methane production and its relationship with the chemical composition of leachate at a landfill site
Cole Bertsch Grant \$400	Northeastern Illinois University	Comparison of chemical and hydrogeologic properties of groundwater extracted from hollow-stem auger and direct push monitoring wells

IGA thanks Ed Mehnert and Erik Spande for helping review the student grant proposals!

WHAT'S HAPPENING IN ILLINOIS GROUNDWATER...

WORLD WATER MONITORING DAY

The World Water Monitoring Day (WWMD), a worldwide effort to gather basic water quality parameters from rivers, lakes, estuaries, and other water bodies, occurred on October 18, 2004. Volunteer monitoring groups, water quality agencies, students, and the general public conducted tests of four key indicators of water quality: temperature, pH, dissolved oxygen, and turbidity. These data are then organized and reported electronically. Partners in the WWMD are the U.S. EPA, U.S. Geological Survey, U.S. Department of Agriculture, U.S. Army Corps of Engineers, and a few private companies (including the company the IGA editor works for, CH2M Hill).

If you are interested in participating in the 2005 WWMD or in getting more information on the effort go to the [WWMD web site](#).

2004 EARTH SCIENCE WEEK

Since October 1998, the [American Geological Institute](#) has organized [Earth Science Week](#) to help the public gain a better understanding and appreciation for the Earth Sciences and to encourage stewardship of the Earth. Earth Science Week seeks to:

- To engage students in discovering the Earth sciences.
- To remind people that Earth science is all around us.
- To encourage Earth stewardship through understanding.
- To motivate geoscientists to share their knowledge and enthusiasm about the Earth.

This year's Earth Science Week was from October 10-16, 2004 and celebrated the theme "Living on a Restless Earth". The statement in support of Earth Science Week by the [United States Geological Survey and the National Oceanic and Atmospheric Administration](#) notes that "Whether it is from a great natural disaster, a short-term weather event like El Niño, or longer-term processes like plate tectonics, earth processes affect us all."

Illinois is one of seven states that have issued [perpetual proclamations](#) in support of earth sciences, confirming that an understanding of earth science is fundamental for society.

AGENCY AND REGULATORY UPDATE

INTERACTIVE GEOSPATIAL DATA AT THE U.S. EPA

The U.S. EPA has provided a web-based tool “[Windows to My Environment](#)” (WME) that provides a wide range of federal, state, and local information about environmental conditions and features in an area of your choice. This application is provided by the U.S. EPA in partnership with federal, state, and local government and other organizations.

WME provides an interactive map, geographic statistics on the area of interest including population, locale designations, water bodies, etc., and links to information from federal, state, and local partners on air and water quality, watershed health, Superfund sites, fish advisories, and impaired waters. It also helps identify local services working to protect the environment in your area.

PROPOSED INCREASE FOR RADIUM IN DRINKING WATER

Modified from [IPCB News](#)

The Illinois Pollution Control Board (ICPB) on July 2004 sent to first notice a proposal which would amend radium water quality standards. The Illinois Environmental Protection Agency (IEPA) filed the proposed rulemaking entitled [Revisions To Radium Water Quality Standards: Proposed New 35 Ill. Adm. Code 302.307 and Amendments To 35 Ill. Adm. Code 302.207 and 302.525](#) on January 13, 2004. The proposal would change the general use and Lake Michigan water quality standards for radium from 1 picocurie per liter (pCi/L) to 5pCi/L and apply the proposed standards specifically to surface waters used for public and food processing water supplies. These changes make the water quality standards consistent with the federal finished water maximum contaminant level (MCL) and ensure the protection of surface water intakes for raw drinking water in Illinois. Radium is a naturally occurring radioactive metal that is commonly found in Illinois groundwater. The proposed changes are also expected to relieve a regulatory burden for many existing publicly owned treatment works (POTWs) that receive, treat, and discharge wastewater from public water supplies that remove radium from high radium groundwater.

2004 ILLINOIS WATER QUALITY REPORT AVAILABLE

The 2004 Illinois Water Quality Report was prepared by the Illinois Environmental Protection Agency to satisfy reporting requirements in Section 305(b) of the federal Clean Water Act. This report provides an assessment of the quality of Illinois’ surface and groundwater resources. An electronic copy of this report, previous reports, tools, and related information are available at the [Illinois EPA website](#).

AGENCY AND REGULATORY UPDATE (CONTINUED)

IMPROVED DRINKING WATER QUALITY IN ILLINOIS

Modified from IEPA Drinking Water Compliance

The Safe Drinking Water Act requires that the U.S. EPA and the Illinois EPA provide data to Illinois consumers on compliance of community water supplies to state and federal limits on contaminants. During the 2003 calendar year 93.5 percent of Illinois communities water supplies that met all state and federal drinking water requirements, which is a 4 percent improvement since 1995, when publication of annual data was first required. In the 2002 calendar year 93.0 percent of Illinois community water supplies met all state and federal drinking water requirements.

Supplies providing drinking water to consumers are regulated either as community or non-community water supplies, based chiefly on the number of users they serve for specified periods of time. Community water supplies are regulated by the Illinois EPA. Non-community supplies are under the jurisdiction of the Illinois Department of Public Health. During 2003, there were 5,956 public water supplies in the state, 1,813 of them defined as community water supplies falling under IEPA regulation. During 2003, a total of 442 of the 5,956 public water supplies in the state are shown to have had violations of regulations. These 442 water systems accumulated a total of 2,082 violations. As in the past, most violations were monitoring/reporting violations (failure to collect samples or provide documentation), short in duration, and the public water supply returned to compliance the next reporting period. The overall potential risk to public health was minimal. When a potential health risk was present, the public water system was required to issue public notification to all consumers.

In most cases, when contaminant levels exceed maximum allowable limits, treatment is required to be installed in the shortest amount of time, taking into consideration the cost, health effects (acute vs. short-term), and size of the project. All of the public water supplies that had violations during 2003 have either returned to compliance, entered into an enforceable agreement and schedule to take whatever steps are needed to return to compliance, or are in a formal enforcement process involving the office of the Illinois Attorney General. Enforcement cases involving the office of the Illinois Attorney General could result in monetary penalties as well as being required to achieve compliance with the regulations.

U.S. EPA and states evaluate compliance on the basis of both acute and chronic health requirements with standards that usually differ for the two categories. The latest IEPA figures show that 99.9 percent of the population served by community water supplies received water that met all acute standards, and 93.6 percent received water that was in compliance with chronic requirements. Standards for acute requirements are usually stricter than chronic standards. For most contaminants, the latter is based on projected health risks from daily consumption of large amounts (approximately two liters) of water on a daily basis over an extended period of time.

AGENCY AND REGULATORY UPDATE (CONTINUED)

ILLINOIS BILLS FORCE POLLUTERS TO CLEAN UP, PAY FOR DAMAGES

Modified from [Illinois Cleanup Press Releases](#)

Governor Rod Blagojevich signed into law two bills aimed at preserving the state's ability to force polluters to clean up their environmental damage and to punish those who deliberately violate environmental protection laws. House Bill 5823, sponsored by State Rep. Barbara Flynn Currie (D-Chicago) and State Sen. William Haine (D-Alton), addresses a recent Second District Appellate Court ruling (*State of Illinois v. AgPro, Inc. and David Schulte*) in which the court said the Attorney General and local States Attorneys have only limited authority to force polluters to clean up environmental damage they cause. The Appellate Court held that in most cases, all the trial court can do is order the polluter to stop adding to its mess. House Bill 5823 amends the state's Environmental Protection Act to provide that the Court can issue an injunction ordering polluters to clean up the damage they cause.

"The court's decision threatens a critical authority the state has had for more than 30 years. We must be allowed to do more than just stop pollution, we also need to make those responsible clean up the property they have contaminated," the Governor said.

Governor Blagojevich also signed House Bill 4567, sponsored by State Rep. Ricca Slone (D-Peoria) and State Sen. John Cullerton (D-Chicago), which clarifies a portion of the environmental "bad actor" bill signed into law by the Governor last year. The legislation makes clear that a person or business found by a court or the Illinois Pollution Control Board to have committed a willful or knowing violation of any portion of the Environmental Protection Act is banned from doing business with the State or any state agency from the date of the order containing the finding until five years after that date.

NEW DATA FOR THE CARBON SEQUESTRATION PROJECT

Modified from [ISGS Carbon Sequestration Summary](#)

The Midwest Geological Carbon Sequestration Consortium (MGSC) will assess the potential for geologic sequestration (storage) of carbon dioxide in the deeply buried unminable coal seams, depleting oil or gas reservoirs, and brine-filled rock formations found in the Illinois Basin. The Illinois Basin is a geologic depression underlying most of Illinois and extending into southwest Indiana and northwest Kentucky.

Illinois State Geological Survey geologists are working with colleagues at the Indiana and Kentucky Geological Surveys to complete draft maps of the extent, thickness, and depth for the Survant Coal, a seam which is important in the southeastern portion of the Illinois Basin, as a possible coal sink for the Carbon Sequestration project. Unlike most of the major seams in the area, the Survant has not been previously mapped as part of earlier coal resource assessments. As such, this will be a valuable addition to the knowledge of the Survant Coal's CO₂ sequestration potential.

AGENCY AND REGULATORY UPDATE (CONTINUED)

ILLINOIS BROWNFIELDS INITIATIVES

Modified from [Brownfields Initiatives](#)

Illinois Governor Blagojevich has awarded brownfield cleanup grants to 10 communities throughout Illinois to conduct environmental investigations and cleanups. These grants will be a part of his *Opportunity Returns* program for the Governor's comprehensive plan to promote economic growth and create more jobs throughout the state. The funding is being provided through the Illinois Environmental Protection Agency (IEPA). The Brownfields program is proving that responsive environmental policy can act as an effective economic development tool. The sites announced to date in these regions are summarized below.

- Monticello received a **\$17,500** grant out of the U.S. EPA Leaking Underground Storage Tank Brownfields Special Projects Fund allocation to Illinois. Monticello previously received \$118,176 in state brownfields grants for the site assessment and cleanup plans.
- Rossville received a nearly **\$77,000** Municipal Brownfields Redevelopment Grant that will be used for assessment and cleanup of two former gas stations in the downtown district
- Sterling received a **\$100,000** grant cleanup at former Northwestern Steel and Wire facility, a 750-acre site. The latest grant complements a \$240,000 state grant previously awarded to Sterling for the same site.
- Princeton received a grant for more than **\$48,000** to assess two sites. The first is a former service station at a prominent location at the entrance of the north business district, and the second site is a former newspaper printing press business.
- City of Canton has been awarded a **\$425,000** Brownfields grant to conduct environmental cleanup activities at the former International Harvester factory.
- Rosemont will use its **\$32,945** grant to assess and cleanup a former industrial park
- Geneva was awarded **\$9,220** to conduct an environmental assessment at a former gas station.
- East St. Louis will be awarded a **\$28,500** grant to conduct an environmental investigation at the site of a former dry cleaning business.
- New Athens will receive a **\$24,112** Municipal Brownfields Redevelopment Grant to do an environmental assessment and cleanup plan of a former boat sales and service site.

Governor Rod R. Blagojevich praised CenterPoint Properties for winning two of the prestigious 2004 national Phoenix Awards™ and commended the company's environmental cleanup and redevelopment efforts at the Chicago Manufacturing Campus on the city's south side. The entire site was cleaned up and developed under Illinois EPA's voluntary site remediation program. So far, 80 acres have been cleaned up and another 15 acres are pending. Federal, state and city agencies also worked together to provide innovative storm water drainage and natural landscaping at the site. The Phoenix Awards recognize innovative brownfields redevelopment methods. CenterPoint was the first runner-up for the national grand prize and also stood out in the Midwest category which included entries from Indiana, Michigan, Minnesota, Ohio and Wisconsin.

AGENCY AND REGULATORY UPDATE (CONTINUED)**ISGS WATER WELL DATA NOW DELIVERED TO THE PUBLIC VIA INTERACTIVE MAP SYSTEM**

Submitted by Bev Herzog/Illinois State Geological Survey

A simple interactive map, accessed through the [ISGS website](#) allows the public to easily obtain information from the ISGS's database on water wells and other related borings. Visitors to the site can use the map to zoom in to a specific geographic location in the state and see the water wells and other related borings recorded in the database. By clicking on the individual well spots, information about the location and ownership of the well, and its total depth can be viewed in tabular form. Clicking on the specific well identifier in the table brings up the driller's description of the character of the geological materials penetrated by the well (if recorded). The new query system provides a simple way for the state's water well drillers, environmental consultants, consulting geologists and others to acquire and use huge quantities of geological data from the files in the ISGS's Geological Records unit. Records from nearly 700,000 borings, representing billions of dollars invested in the past 100 years or more in exploring for water, oil and gas, coal and other materials in the state, are available in the files. Not all the files have been converted to digital format, however. The location and ownership information ("header" data) for about 327,000 wells drilled for water, coal exploration and engineering tests are available through the new on-line query system. About 214,000 of these wells have geological information recorded in the database. Geological and other data on about 180,000 oil and gas production and exploration wells can be accessed through a separate system. Much work remains to make both digital databases complete.

NEW ISGS PUBLICATIONS

Circular 563: ***Groundwater Geology of DeKalb County, Illinois, with Emphasis on the Troy Bedrock Valley***, by Vaiden et al. This report presents findings of a study of the geology and shallow groundwater resources of DeKalb County, concentrating on the aquifers of the buried Troy Bedrock Valley, which have potential for future groundwater development. The study describes the shallow bedrock formations and presents updated maps showing their thicknesses and extent. Cross sections depict the complexity of the materials overlying the bedrock and filling the Troy Bedrock Valley. Descriptions of the three informal units comprising the sediments in the buried bedrock valley give a better understanding of the aquifers in the county.

Circular 564: ***Delineation of the Coalbed Methane Resources of Illinois***, by Demir et al. The report discusses results of our recent research assessment project designed to identify and sample Illinois' prominent coal seams and Pennsylvanian black shales for critical methane gas data that may enhance your CBM exploration program. Maps produced from project data delineate the thickness, depth, rank, elevation, and cleat directions of coals, tectonic structures,

AGENCY AND REGULATORY UPDATE (CONTINUED)**NEW ISGS PUBLICATIONS (CONTINUED)**

and mined-out areas in Illinois. Data tables show gas contents, methane isotherm curves, desorbed gas chemical and isotopic compositions from the 2001–2002 ISGS drilling program, as well as compiled data from older sources. This information can be used to evaluate areas of the state's important coalbed methane reserve.

Illinois Map 12: ***Illinois Land Cover***, by Luman et al. This Illinois Land Cover map was produced in response to a need for current, detailed information about Illinois land, the raw material of the state. This land cover information for twenty-six identified categories is essential to ensure wise land-use decisions and good land stewardship. The satellite image data used to construct the map revealed that more than 76% of Illinois land is devoted to agriculture, primarily corn and soybeans, followed by forested lands (11.5%), urban and built-up lands (6.5%), wetlands (3.9%), and surface water (1.7%). A great companion to the Illinois Surface Topography Map.

Geoscience Education Series 16: ***Guide to Rocks and Minerals of Illinois***, by Frankie. Rock hounds from amateur to science teacher are sure to be interested in this comprehensive reference on the state's rocks and minerals. More than 40 color plates display excellent examples of rock types ranging from fluorite (the state mineral) to the world-renowned geodes of western Illinois. The photographs are accompanied by detailed descriptions of both common and very unusual rocks and minerals in Illinois. Useful identification flow charts and keys help the reader identify their specimens. In addition, the guide summarizes the basic geology of Illinois and discusses the physical properties of rocks and minerals, ways to collect and identify samples, and the importance of rocks and minerals to society.

Geoscience Education Series 17: ***Illinois Groundwater: A Vital Geologic Resource***, by Killey and Larson. Learn more about an essential Illinois resource we often take for granted and sometimes misunderstand. Using easy-to-read text and understandable diagrams, the authors explain what groundwater is, how groundwater is influenced by its geologic framework, what kinds of materials make up aquifers, and how water moves underground. The text also discusses how water supplies are located and retrieved, well types, well maintenance, groundwater quality, and other issues. Understanding how critical groundwater is to Illinois is the first step in managing and protecting this valuable resource.

Geoscience Education Series 18: ***Land-Use Decisions and Geology: Getting Past "Out of Sight, Out of Mind"***, by Killey and Berg. The impacts of the state's large population and its industrial and agricultural bases have presented many kinds of environmental challenges. This book shows how understanding a location's geologic framework and contamination potential can help society make safer, more cost-effective decisions about land use.

AGENCY AND REGULATORY UPDATE (CONTINUED)**NEW ISGS PUBLICATIONS (CONTINUED)**

Geoscience Education Series 19: *Guide to the Illinois Caverns State Natural Area*, by Panno et al. Spelunkers and armchair travelers both will find plenty to interest them in this comprehensive guide. You'll visit the cave feature by feature, and, along the way, you'll learn about the area's unique karst terrain, the plants and animals of the area, and the processes that formed and continue to change the caverns and surrounding area.

Illinois Fossils, by Kolata and Norby. Illinois Fossils is a poster that is a great size to display on office, family room, or bedroom wall. Side 1 is covered with beautiful photographs of museum-quality fossil specimens shown in high resolution. The key on side 2 provides additional information about those specimens. Also on side 2 are the answers to some commonly asked questions: What are fossils? Why are fossils so important? How old is that fossil? Where in Illinois are fossils from different periods found? Some of the most common fossil types found in Illinois are discussed.

FOCUS ON ILLINOIS GROUNDWATER EDUCATION**IDNR GROUNDWATER EDUCATION PROGRAM TERMINATED**

Modified from material submitted by Harry Hendrickson

The IGA is saddened to note the apparent end of the Illinois Department of Natural Resources (IDNR) Groundwater Education Program. The IDNR laid off staff responsible for this program on October 15, 2004. At this time, there are no announced plans to adapt, move, or reorganize the programs and initiatives to other entities within the IDNR.

The Groundwater Education Program was developed as part of the Illinois Groundwater Protection Act enacted in 1987. The act recognized a balance of research, monitoring, technical assistance, education, state and local regulation, and evaluation was needed to protect this invisible but vital natural and public resource. The program was evaluated and adapted each year to meet changing needs, and biennial reports to the Governor and Legislators traced its progress. This complex but workable program was cited by federal agencies and the League of Women Voters as a model for others to follow. It was also financially frugal, existing on about 1.5 staff, securing over \$2 million in matching funds or services while providing free publications, demonstrating well maintenance and abandonment procedures, and providing annual water well clinics at the state fairs.

The program's target audience was diverse, and in recent years the highest emphasis was placed on teacher education. Popular teaching tools such as the water-budget meter stick, and groundwater flow models were developed and distributed widely. Activities of the program included the *Shining Stars Awards* program for local governments, educational support for Regional Groundwater Protection Committees of Illinois, *Healthy Water, Healthy People* teacher education program, *H2O BELOW* teacher curriculum and groundwater model building workshops, and the *Groundwater Education Materials (GEM) Center* for teachers and the public. Past efforts also included a focus on sealing abandoned wells.

BITS AND PIECES

FIELD TRIP NOTES FROM YUCCA MOUNTAIN

Submitted by Dan Kelleher

"Hard Hats Required" was read by workshop attendees entering into the Yucca Mountain Proposed Radioactive Waste Repository at the Nevada Test Site last month. Attendees from twenty-one states, including Illinois, participated in the three-day workshop at University of Nevada, Las Vegas (UNLV) conducted by the Midwest GeoSciences Group. The workshop featured a field trip to the Nevada Test Site that is located about 100 miles north of Las Vegas.

The workshop *Advances in Hydrogeologic Analysis of Fractured Bedrock Systems* was conducted this year at the University of Nevada Las Vegas in order to tour inside Yucca Mountain. "For a limited time, non-project-related professionals are allowed access into Yucca Mountain Project tunnel pending Department of Energy approval," stated Tim Kemmis, one of the workshop coordinators. Kemmis added, "The field trip illustrates many of the principles taught during the first day of classroom sessions."

Rob Hoey of the Maine Department of Environmental Protection observing the absence of seepage and low humidity shared "...this tunnel is much drier than I expected". Rob's comment was indicative of many attendees' observations due to the depth of the water table exceeding 1,500 feet below the tunnel entrance. The main criterion for storage of high-level nuclear waste at Yucca Mountain is that the facility be secure for 10,000 years. A major concern, however, is rock fracturing and how that would affect ground water seeping into the facility and to the water table. As a consequence, Yucca Mountain is perhaps the most extensively studied fractured rock site in the world.

Field trip guides from the Department of Energy pointed out the subvertical faults along the tunnel walls and explained how individual joints and fractures were mapped throughout the proposed tunnel area. Another concern about the site is the timing and magnitude of faulting bounding the Yucca Mountain area. Field trip participants observed trenches where extensive investigations were made of the age and displacement of nearby faults. Other concerns about the site were discussed by Yucca Mountain guides, including prediction of long-term climatic change and the effects of rock heating and cooling related to long-term storage of the nuclear waste.

The course focused on combining fundamental approaches with recent advances in hydrogeologic site characterization of fractured bedrock settings. Rob Hoey reported that site characterization and aquifer testing topics are much more comprehensive than other courses dedicated to the subject of fractured bedrock. This Midwest GeoSciences Group recently announced that they are offering the same course again next year at the Desert Research Institute at UNLV with a field trip into Yucca Mountain again.

ANNOUNCING: IGA OFFICER CANDIDATES FOR 2005

CANDIDATE FOR CHAIR OF IGA: MR. ERIK SPANDE is an Illinois licensed professional geologist and has been an employee at the engineering firm CH2M Hill for 14 years. Mr. Spande specializes in applied hydrogeology and aquifer characterization, with a focus on fate and transport of contaminants for industrial and public clients. Erik has a M.S. degree in geology with a hydrogeology specialization from Northern Illinois University in 1990 and a B.S. degree in geology from the University of Northern Iowa in 1987. Erik has been a member of the IGA since the late 1980s, the editor for the IGA since 1992, and the Vice-Chair in 2003.

CANDIDATE FOR VICE-CHAIR OF IGA: DR. STEPHEN J. VAN DER HOVEN is currently an assistant professor at Illinois State University. He received a B.S. from Southampton College, an M.S. from the University of Arizona, and a Ph.D. from the University of Utah. His current research interests include using dissolved helium as a groundwater dating technique, nitrate cycling in the shallow subsurface, geochemical controls on dissolved arsenic, and groundwater-surface water interactions.

CANDIDATE FOR DIRECTOR OF IGA: MR. DON KEEFER is a geologist and the Head of the Hydrogeology Section at the Illinois State Geological Survey. He received a M.S. in soil water quality and a B.S. in geology from the University of Illinois at Urbana. In his 19 years with the ISGS, his research interests have focused on the impact that geologic materials have on contaminant fate and transport, the importance of heterogeneities and preferential flow paths on contaminant fate and transport, and the application of geologic information to groundwater resource protection. Don's current research interests focus on methods for characterization and modeling heterogeneous geologic deposits, particularly for addressing problems of groundwater management, protection or remediation.

CANDIDATE FOR SECRETARY OF IGA: MS. DANIELLE WALLIN has a B.S. degree in geology from Eastern Illinois University (1999) and a M.S. degree in geology from Northern Arizona University (2001). She currently is employed as an environmental geologist with Farnsworth Group, Inc. in Bloomington, Illinois where she specializes in water supply and resource evaluation, well design, environmental assessments, environmental remediation, hydrology, permitting and project management.

CANDIDATE FOR TREASURER OF IGA: DR. STEVE BENNETT received his B.S. in geology in 1988 from University of Northern Iowa, his M.S. in geology in 1990 from Indiana University, and his Ph.D. in geology in 1994 from Indiana University. After completing his Ph.D. he became an Assistant Professor in the Department of Geology at Western Illinois University in August of 1994. Dr. Bennett teaches courses in introductory physical geology, mineralogy, oceanography, hydrogeology, and at the Western Illinois University summer geology field camp. Dr. Bennett is formerly a Director and Chair of the IGA.

CANDIDATE FOR STUDENT DIRECTOR OF IGA: MR. JOHN E. KELLER is currently a doctoral student in the Environmental Resources & Policy Ph.D. program at Southern Illinois University. He received his B.S. in geology from the University of Kansas in 1996. He completed his M.S. in hydrogeology from Southern Illinois University in 2000. During his time at SIU, he participated in an Illinois Environmental Protection Agency (IEPA) funded project to delineate Wellhead Protection Areas for small communities in Illinois. The work involved three-dimensional numeric groundwater modeling in combination with analysis of complex hydrogeologic conditions. Previously, Mr. Keller worked as a field hydrogeologist for ARCADIS from July 1999 to January 2003, and conducted aquifer tests and site characterization investigations.

FALL 2004 MEETING DETAILS

The Fall Meeting of the Illinois Groundwater Association will be held at the [Fermi National Laboratory](#) in Batavia, Illinois on Wednesday, November 17, 2004. On-site registration with coffee and rolls begins at 8:15 a.m. and the technical program will begin at 9:00 a.m.

Meeting Agenda

Topics on the agenda include arsenic treatment options for complying with new drinking water standards, anthropogenic constituents in shallow groundwater of the Upper Illinois River Basin, accessibility of ISWS groundwater data using GWINFO and ARC-IMS, hydrocarbon remediation at Hartford, Illinois, phytoremediation at Argonne National Laboratory, nitrate transport in the vadose and shallow saturated zone, a regulatory update from the Illinois EPA, an update on well construction code and much more! At the end of the meeting there will be time for an informal Q & A to learn more about the research conducted at Fermi. A complete agenda is on the last page of this newsletter.

Location Information

Enter Fermilab through the Pine Street gates, and proceed to the Lederman Science Center to get a visitor's pass. You will need a driver's license or other legal form of identification. The conference will be held in the Curia II conference room on the second floor in Wilson Hall. For driving directions, maps, and further information about visiting Fermilab, refer to www.fnal.gov/pub/visiting/hours/index.html.

Additional Information

Lunch will be served in the Fermilab cafeteria and the cost is not included in the registration. For those needing overnight accommodations, a list of nine local hotels with rates is available at <http://www.fnal.gov/pub/forphysicists/users/hotels.html>.

Please share this announcement with your colleagues. We would love to see them, too!

MEETING REGISTRATION

Registration includes a morning and afternoon refreshments. **Become a member and save money on registration costs. Register by November 9th and save even more!** Please make checks payable to the Illinois Groundwater Association if registering by mail or pay at the conference if registering by email or fax.

<i>Early Registration</i> <i>(received by 11/9/2004)</i>	
Member:	\$40.00
Non-Member:	\$60.00
Student:	\$15.00
<i>Late Registration</i>	
Late Member	\$55.00
Late Non-Member	\$75.00
Late-Student	\$20.00

Contact Information

Name: _____
 Position: _____
 Employer: _____
 Address: _____

 Phone: _____ Fax: _____
 E-mail: _____

IGA MEMBERSHIP

Membership is \$15 (or \$5 for students) and is available to anyone interested in the groundwater resources of Illinois. Dues for each calendar year are payable at the time of the *spring* meeting.

<i>Membership Dues</i>	
Renewal or New Member:	\$15.00
Student:	\$5.00

Contact Information
(if same as above, check here)

Name: _____
 Position: _____
 Employer: _____
 Address: _____

 Phone: _____ Fax: _____
 E-mail: _____

Send registrations and memberships to:

Sara Williams, IGA Secretary
 Weaver Boos Consultants, Inc.
 1901 Butterfield Rd., Ste. 800
 Downers Grove, IL 60515
 Phone: 630-968-7777 Fax: 630-968-7769
swilliams@weaverboos.com

PROVISIONAL AGENDA

ILLINOIS GROUNDWATER ASSOCIATION 2004 FALL MEETING

NOVEMBER 17, 2004

FERMI NATIONAL ACCELERATOR LABORATORY, BATAVIA, ILLINOIS

- 8:15-9:00 Registration with refreshments
- 9:00-9:15 Opening Remarks: **Randy Locke**, IGA Chair
- Morning Session**
- 9:15-9:35 **Darin St. Germain**, USFilter Corporation, *Treatment Options for Drinking Water Supplies to Comply with the New Stricter Arsenic Standard*
- 9:35-9:55 **Timothy Farrell**, Engineering Enterprises, Inc., *Water Works System Improvements in the United City of Yorkville*
- 9:55-10:15 **Jerry Dalsin**, Illinois Department of Public Health, *IDPH Update Regarding Closed Loop Well Construction, Well Construction Statistics and Proposals to Amend the Water Well Construction Code*
- 10:15-10:30 **Break**
- 10:30-10:50 **Business meeting and time for announcements**
- 10:50-11:10 **William Morrow**, United States Geological Survey, *Anthropogenic Constituents in Shallow Ground Water in the Upper Illinois River Basin*
- 11:10-11:30 **Walt Kelly**, Illinois State Water Survey, *Effects of Urban Activities on Shallow Groundwater Quality in the Chicago Metropolitan Area*
- 11:30-12:00 **Rick Cobb**, Illinois Environmental Protection Agency, *IEPA Minute: Regulatory Update of Initiatives to Protect and Restore Groundwater Resources in Illinois*
- 12:00-1:00 **Lunch**
- Afternoon Session**
- 1:00-1:20 **Van Bowersox**, Illinois State Water Survey, *Monitoring Chemical Climate Change in America*
- 1:20-1:40 **TBA**
- 1:40-2:00 **Steve Wilson**, Illinois State Water Survey, *GWINFO and ArcIMS - Development of the ISWS Groundwater Databases for Staff Accessibility and the Web.*
- 2:00-2:20 **Break**
- 2:20-2:50 **Chris Cahnovsky and Gene Search**, Illinois Environmental Protection Agency, *Groundwater Investigation and Vapor Mitigation at a Hydrocarbon Release in Hartford, Illinois*
- 2:50-3:10 **Norb Golchert**, Argonne National Laboratory, *Phytoremediation at Argonne National Laboratory*
- 3:10-3:30 **Diane M. Lamb**, Illinois State University, *Nitrate Transport in the Vadose and Shallow Saturated Zones under a Tiled Bloomington, Illinois Research Farm*
- 3:30 Informal Q&A on Fermi National Laboratory
- 4:00 Adjourn and IGA Executive Committee Meeting