



Meeting Speakers and Registration

Illinois Groundwater Association 30th Anniversary Meeting Friday, April 19, 2013

Best Western Ashland House Conference Center
201 E Ashland Street
Morton, IL 61550



For 30 years, IGA has provided an avenue for networking between groundwater professionals, mentoring for students and entry-level groundwater professionals, "a forum for learning new groundwater regulations, techniques for groundwater monitoring, technical innovations in the groundwater field, case histories of interesting groundwater problems and solutions, and activities and programs of public and private organizations." (<http://www.illinoisgroundwater.org/history.html>)

Registration 7:30am – Webinar 8:00am – Opening remarks 10:00am – Close Meeting 3:00pm

Spring Meeting Program – Speakers – Topics:

- **Webinar, Midwest Geosciences** -- "No Purge Groundwater Sampling: Is it time to curb the urge to purge?" -- presented by Kent Cordry, GeoInsight, Inc.
- **Randy Locke**, Coordinator, MGSC MVA Program, ISGS -- *Carbon Sequestration and Groundwater*
- **Daniel Drommerhausen**, Shaw Environmental – *Development of a Groundwater Monitoring Program at a Subtitle D Landfill (Peoria City/County Landfill #3)*
- **Larry Kinsman** -- Orin Technologies – *Chemical solutions for contaminated soil and groundwater remediation – with discuss either: Free product recovery or Zero valence iron injection*
- **Ryan Cox**, SIU – student grant winner -- "A model of groundwater contaminant transport in Saline Valley aquifer, Gallatin County, Illinois"
- **William Morrow**, USGS – *Groundwater/Sewer Interactions (Streetscapes Project – Chicago)*
- **Al Wehrmann**, ISWS – *Mahomet Aquifer – Sole Source Aquifer Process*

2013 IGA Science Awards -- to be presented at April 19th meeting

- Randy Locke – Research/Scientific Achievement
- Cassandra McKinney – Public Information/Education Award

CEU credits will be available for meeting attendance. You may **pre-register** and pay at the door or **register on-line** at <http://illinoisgroundwater.org/join.html>

Early Registration thru April 12th

Member: \$ 65.00
Non-member: \$100.00
Student: \$ 20.00

Late Registration

Late Member \$ 75.00
Late Non-member: \$110.00
Late Student: \$ 20.00

Membership Dues

Renewal or New Member: \$25.00
Student Member \$ 5.00

Send Contact Information,

Registration and/or Membership dues
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Looking ahead -- Fall 2013 IGA Meeting – Sept. 13, 2013 – Clocktower Inn, Rockford, IL

- **Melissa Lenczewski**, NIU – *NGWA update national groundwater issues/legislation*
- **Panel of Past IGA Student Awardees** – *where they are now*
- **Bill Buscher**, IEPA – *Groundwater issues related to coal mines*
- **Laura Hunt-Martin**, CH2M Hill - *Site Closure for a Chlorinated Plume in Bedrock*

IGA Spring 2013 Program Speakers and Topics
Best Western Ashland House Conference Center
Morton, Illinois 61550
April 19, 2013

- 7:30-8:00 **Registration opens**
- 8:00-9:30 **Webinar -- Midwest Geosciences --** *"No Purge Groundwater Sampling: Is it time to curb the urge to purge?"* -- presented by Kent Cordry, GeoInsight, Inc.
- 10:00-10:15 **Welcome and Opening remarks**
- 10:15-10:45 **Randy Locke**, Coordinator, MGSC MVA Program, ISGS -- *Carbon Sequestration and Groundwater*
- 10:45-11:15 **Daniel Drommerhausen**, Shaw Environmental -- *Development of a Groundwater Monitoring Program at a Subtitle D Landfill (Peoria City/County Landfill #3)*
- 11:15-11:45 **Larry Kinsman** -- Orin Technologies -- *Chemical solutions for contaminated soil and groundwater remediation -- will discuss either: Free product recovery or Zero valence iron injection*
- 11:45-12:00 **Awards And Recognition**
- 12:00 -- 1:00 **Lunch**
- 1:00-1:15 **Open Mic / Current issues**
- 1:15-1:45 **Ryan Cox**, SIU -- student grant winner -- *"A model of groundwater contaminant transport in Saline Valley aquifer, Gallatin County, Illinois"*
- 1:45-2:00 **Break**
- 2:00-2:30 **Al Wehrmann**, ISWS -- *Mahomet Aquifer -- Sole Source Aquifer Process*
- 2:30-3:00 **William Morrow**, USGS -- *Groundwater/Sewer Interactions (Streetscapes Project -- Chicago)*
- 3:00 **Close Meeting**

The Illinois Basin - Decatur Project Monitoring, Verification, and Accounting (MVA) Program

Randy Locke, PG

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The Midwest Geological Sequestration Consortium, led by the Illinois State Geological Survey, is conducting a large-scale carbon capture and storage (CCS) project in Decatur, Illinois, USA to demonstrate the ability of a deep saline formation to store one million tonnes of carbon dioxide (CO₂) from an ethanol production facility. In November 2011, CO₂ injection began at a rate of 1,000 tonnes/day and will continue for three years into the Mount Simon Sandstone at a depth of approximately 2,100 meters (7,000 feet).

An extensive Monitoring, Verification, and Accounting (MVA) program has been undertaken for the Illinois Basin - Decatur Project and is focused on the 0.65 km² (0.25 mi²) project site. Up to 18 months of pre-injection data have been collected to characterize the site and establish pre-injection conditions. Subsurface monitoring efforts include 2D seismic surveying; 3D seismic and vertical seismic surveying; passive seismic monitoring; injection zone temperature, pressure, and fluid monitoring; above caprock temperature, pressure, and fluid monitoring; and open and cased hole logging. Near-surface monitoring efforts include near-infrared color aerial imagery acquisition, high-resolution electrical earth resistivity surveys, shallow groundwater monitoring, soil CO₂ flux monitoring, soil gas sampling and net CO₂ flux monitoring. Monitoring efforts will be continued during the three-year injection and two-year post-injection periods.

Subsurface and near-surface monitoring are integral efforts to reach MVA and project goals of: 1) establishing pre-injection conditions to evaluate potential impacts from CO₂ injection, 2) demonstrating that project activities are protective of human health and the environment, and 3) quantifying and tracking CO₂ stored in the Mount Simon Sandstone. Experiences from selected Illinois Basin – Decatur Project monitoring efforts will be presented.

“Development of a Hydrogeological Investigation for the Siting of a Subtitle D Landfill (Peoria City/County Landfill (PCCLF) No. 3)”

Daniel Drommerhausen, P.G.

On behalf of Peoria City/County Landfill, Inc. (PCCLI), Shaw Environmental, Inc. (Shaw) performed a site investigation for the proposed Peoria City/County Landfill (PCCLF) No. 3. The purpose of this investigation was to characterize the geology and hydrogeology in proximity to the proposed PCCLF No. 3 property and to evaluate the suitability of the site for development of a landfill unit. Due to the identified presence of underground coal mines in the vicinity of the proposed PCCLF No. 3 site, this effort also included an investigation to assure that no underground mines are present beneath the proposed landfill unit.

Results of the site investigation have led to the development of a landfill design which is supplemented by existing geologic features to provide a high level of environmental safety. The mine spoil and naturally present shale beneath the site will work in conjunction with the engineered features of the landfill to protect groundwater resources in Peoria County. Additionally, the investigation has determined that no underground coal mines exist beneath the proposed expanded landfill.



Larry Kinsman
Principal
ORIN Remediation Technologies, LLC.

Larry Kinsman is an owner of ORIN Remediation Technologies, LLC., a contractor based in Verona, WI, specializing in ex-situ and in-situ chemical treatments. Larry earned a Bachelor of Science Degree in Environmental Geology and Earth Resources at the University of Wisconsin-Eau Claire in 1995.

Larry has several years of experience as a geologist and hydrogeologist in project design, cost estimation, field supervision, and technical support of environmental remediation projects. Larry has also been involved in training regulatory agencies and foreign governments on numerous subjects including remediation technologies and treatment chemistries. Larry was part of the Interstate Technology and Regulatory Work Group (ITRC) that developed the original technology/regulatory guidance documents for the *in-situ* chemical oxidation of soil and groundwater. ITRC is a state-led coalition that works together with industry and stakeholders to achieve regulatory acceptance of environmental technologies.

Larry has also assisted in the development of treatment chemistries used for the destruction of organic and inorganic contamination. As a result of this work, Larry has been awarded two patents pending for the development of chemistries to destroy organic compounds.

Larry will be giving a talk on free product utilizing insitu chemical treatment. ORIN has applied this approach on several sites around the country. Product thicknesses treated have been from .5 inches of product to over a foot of product.

A model of groundwater contaminant transport in the Saline Valley aquifer, Gallatin County, Illinois

Ryan Cox, M.S. Candidate
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Historically, small communities in Southern Illinois encounter water supply issues in drier months of the year. The Saline Valley Conservancy District (SVCD) formed to provide a stable source of water to many communities in Southern Illinois. The SVCD well field located in the thickest, most productive region of the Saline Valley Aquifer lies directly adjacent to a reclaimed coal mine. This mine, by subsurface movement and surface discharge, proved responsible for deteriorating the quality of the water in the surrounding area, including the aquifer. Previous studies conducted in the region have addressed water supply issues and simulated contaminant transport from the reclaimed mine. The limited scope of these models does not extend to natural hydrogeological boundaries. This study extended the model boundaries to natural boundaries including the Saline River to the south, the Wabash and Ohio Rivers to the east, and the bedrock high pinch-out and fining valley textures to the west. The flow model uses parameters from each study as a base then calibrated to 18 discrete head measurements. Initial contaminant transport runs using values from previous studies show successful mine reclamation except for surface discharge to a nearby ditch from well pumping. An analysis will be performed that varies parameters to determine if any likely scenarios may cause the plume to travel farther than anticipated. These scenarios will include cessation of surface discharge, increasing contaminant source load, and altering recharge and hydraulic conductivity. Preliminary results suggest reduction of surface discharge will reduce contaminant in nearby production wells.

A Step in Protecting the Mahomet Aquifer – Sole Source Designation

Allen Wehrmann, P.E., P.H. (GW), D.WRE and 1990 Chair of the IGA

The potential landfilling of PCB waste over the Mahomet Aquifer alerted local officials to threats posed to the aquifer's long-term integrity. One avenue for groundwater quality protection is offered by the US EPA's Sole Source Aquifer (SSA) program. If so designated, all *federally-funded* projects are subject to US EPA review to insure that such projects will not present a contamination threat to the aquifer. To be designated, an aquifer must supply at least 50 percent of the drinking water to its service area AND alternative sources of water must be shown to be insufficient to meet drinking water demand. Although SSA designation applies only to federally-funded projects, local public awareness and education efforts should be enhanced by SSA designation.

Best Management Practices at a Chicago Streetscapes Project

By: William Morrow

Chicago is currently rehabilitating an area in the southside of Chicago along Cermak Street and Blue Island as part of the City of Chicago's "Sustainable Streetscapes" program. The program utilizes a wide range of sustainable infrastructure design techniques such as efficient lighting, local and recycled construction supplies, and alternative transportation methods. One objective of the sustainable infrastructure is to reduce runoff from combined sewer overflows to the sewer system, thus increasing groundwater recharge. These infrastructure changes are best management practices (BMPs) designed to divert 80 percent of the typical average rainfall runoff into groundwater recharge. This will be accomplished through the use of permeable pavement along parking areas, bioswales, and infiltration planters along a 1.5 mile stretch of the mixed commercial/light industrial area. The first phase of the BMP installation project was completed in 2012. A network of monitored sewers and observation wells were installed to collect background data for groundwater water levels, sewer water levels and discharge, and temperature, and specific conductance. Further data collection at this network of monitored sewers and observation wells will be used to determine the effectiveness of these BMPs.