



Wisconsin Ground Water Association Newsletter

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President's Message

We are now approaching the end of what has been a lovely summer. As we look ahead to the fall and back to the last few months, we see that WGWA has taken on some wonderful events.

In July, we repeated hosting the successful seminar by WDNR's Mark Gordon on applying the NR 600 and EPA RCRA hazardous waste rules to NR 700 remediations. The first seminar was held in May in Fond du Lac and attended by 70 people. The July seminar was held in Eau Claire and 25 people attended. Hosting seminars is a new venture for WGWA, but fits nicely with our mission of fostering education and understanding of groundwater issues. WGWA responded to a request that these seminars offer Continuing Education Units (CEUs). Boyd was able to determine what was involved in offering CEUs for the seminars and WGWA was able to add that to the value of the seminars.

Plans are moving ahead for the October 4, 2003 family-oriented field trip to the Devil's Lake Area. This field trip is a joint effort with the Wisconsin Section of the American Institute of Professional Geologists (AIPG). AIPG is taking the lead on organizing the field trip this year, so they are handling registrations. We have lined up Emeritus Professor Bob Dott (UW-Madison) and glacial geologist John Attig, PhD (Wisconsin Geological and Natural History Survey), to show us their favorite spots in the Devil's Lake/Baraboo area. Bob and John are putting the final touches on a roadside geology field trip guidebook due out in early 2004. The October 4 field trip will start at Devil's Lake at 10am where we board a coach bus and end at Devil's Lake for a catered picnic at a 5pm. Please see the registration form for the field trip on the WGWA web site (www.wgwa.org).

WGWA has taken on another new venture in organizing a study group for those planning on taking the Professional Geologist exam. The first study

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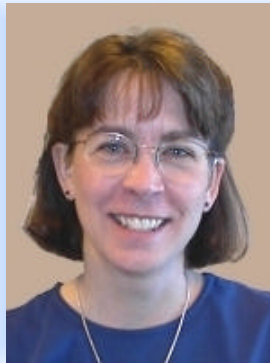
The newsletter is published four times per year. If you have any suggestions or submissions, please contact us at: Wisconsin Ground Water Association, c/o Marilyn Weiss, WGWA Treasurer, P.O. Box 8593, Madison, Wisconsin 53708-8593. Email: wgwainfo@wgwa.org; Web site: <http://www.wgwa.org>. The deadline for submissions to the fall newsletter is October 16, 2003

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group is forming now to prepare the attendees for the October 3 exam. I am pleased that WGWA is able to offer this service to the environmental professionals in Wisconsin. Again, this is consistent with WGWA's mission of connecting environmental professionals.

Boyd has attended the first meetings to plan the April 2004 "Where the Waters Meet" Conference. This meeting will make it two years in a row for the successful joint effort of the River Alliance of Wisconsin, the Wisconsin Wetlands Association, the Wisconsin Association of Lakes, and WGWA. Once again, the joint meeting will be held in Green Bay. The WGWA Annual Meeting, itself, will be held the day after the Where the Waters Meet conference. If you are interested in helping plan these meetings, please contact Boyd.

We are fortunate to have Lee Trotta step forward, to take the reins of the *WGWA Newsletter* editor from the Wayne Hutchinson, who retired after many years of yeoman service. Lee has also stepped forward to take on the task of overseeing WGWA's involvement in the Ground Water Guardian organization.



As we look toward the last quarter of the year we need to be thinking about WGWA elections. We need to have candidates run for President-elect and Treasurer. I am now finishing my second term as WGWA President, and Boyd will become WGWA President for the second time in January 2004. While we have enjoyed our involvement in WGWA it is time for the organization to have new elected officials. Boyd has brought WGWA solidly into the electronic age with *WGWA Notes* and he has assured us that his assistance will continue even after he is President. I can speak from years of working with Boyd that his assistance in coordinating people and events and his electronic knowledge make being WGWA President a simple effort!

Please consider throwing your hat into the ring to run for President Elect for 2004, if elected you would help organize the meetings and other events WGWA decides to pursue during 2004 and you would become President in 2005. The WGWA Treasurer is a two-year position. The treasurer handles WGWA expenses and prepares financial reports for the newsletter. We are pleased to note that the present Treasurer, Marilyn Weiss, has indicated that she will be running for a second term.

If you "want to test the waters" of WGWA leadership, you might consider asking to be considered for the appointed position of WGWA Board Member-At-Large. Kevin Olson's term is expiring at the end of this year, and he has indicated that he'd like to step aside and give "new blood" a chance to participate. An At-Large member has no voting rights on the board, but neither does the member have any defined obligations! The At-Large board member's role in the organization is to participate in board of directors' meetings (usually conducted via toll-free dial-in conference call), and to carve out whatever role or niche he or she desires. Contact any of the existing board members if you have questions about this, or if you would like to be considered for a three-year appointment.

Please contact Margy or Boyd if you are interested in running for President elect or Treasurer, or would like to suggest someone else who should be encouraged to run.

Remember this is YOUR organization. Make it work for YOU. Come on YOUR field trip. Attend YOUR area meetings. Volunteer to assist on YOUR committees. If you do that, then ALL of us, not to mention the groundwater profession, will be the better for it!

Margy Blanchard
President, WGWA

WGWA Board Meeting, July 2, 2003 (Conference Call)

Persons present: Margy Blanchard*, Boyd Possin*, Marilyn Weiss*, Tom Riewe*, Janis Kesy*, Brian Hahn*, Lee Trotta*(* via phone)

I. Call to order about 6:00 pm.

II. Last meeting minutes (March 31, 2003)- Discussed minutes. Approval to finalize and distribute.

III. Treasurer's Report – Account currently \$ 17,718.42. To date two registrations for July 25, 2003 hazardous waste seminar. New category scholarships and donations - \$3065 spent.

IV. Membership Report – As of June 30, 2003 - 326 paid members. Eleven student members. Sixty-two new members as a result of the hazardous waste seminar. There were a number of corporate memberships that dropped.

V. Old Business

- Website – discussion on letting people advertise whom are job searching. Set up so confidential. Allow non-WGWA members to post resume on Website – Margy motioned. Marilyn seconded. Boyd will work with Joan on proposal of how to implement.
- GG Affiliate – How to establish liaisons with existing groups. Some contact has been occurring.
 - Speakers list – topics to offer other GG groups. Ask WGWA members if interested in being on the list – Lee to coordinate. Also possibly asks other GG groups what topics are of interest to them.
 - Possibly offer companies that may have event planning/facilities that they could loan the GG groups.
 - GG committee – involvement in annual GW festival.
 - GW Institute – 2 committee members attended.
- GW Festival – School day event very successful. Family day low attendance.

- Education committee – Contacting Universities to get potential interest and looking for support. Positive responses, but also negative responses because students do not go the extra mile. Ideas to break up liaison duties such as divide into regions/subcommittees; go to campuses of students that attended conference and spoke/received awards; newsletter article listing student paper winners; and focus on contacting one campus at a time.
- April 2003 WGWA Conference – Well attended, excellent presentations. Future strives for higher attendance.
- May 7 – Hazardous waste seminar. Successful approximately 70 people attended. 3 ½ hour presentation and lot of questions. Offering end of July in Eau Claire. Accredited for CEC for tank remover/cleaner, site assessors (4 CEC).
- Any ideas for other seminars?
- 2004 Elections – potential candidates? Treasure – Marilyn willing to run again. President-elect – possibility Dave Nemitz? Need election results by end of the calendar year. Need candidates and position papers by end of October.
- At Large Board Members – need to determine if most senior board member wants to continue.

VI. New Business

- Newsletter editor – Boyd nominated Lee Trotta for editor, Margy seconded. Time for another newsletter – should be issued quarterly, middle of quarter. Editor responsible for content and quality. Include in newsletter – treasury report, report on conference and student awards.
- 2003 High School conference on the Environment – Dec 10, 2003. Asking for donations of \$1000. GG committee to discuss and bring a recommendation back to the board.
- Reimbursement for certain events. Determination to be made on case by case basis. Need scope and cost, etc. Preapproval by newsletter editor. Guideline limit of \$200. Required to write article on the event for newsletter. Only

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reimbursed once an article is approved by newsletter article. Margy made motion to approve. Marilyn seconded.

- Fall Field Trip – AIPG is planning a trip to Devils Lake Area in early October. Boyd to contact AIPG and see if they want to have a joint trip. Do we want separate WGWA field trip? Or do what MN AIPG and MGWA do – take turns planning a joint trip.
- Spring 2004 conference? Team with another organization? Who to team with? AIPG, AWRA, DNR, DCOM, WGNHS? Boyd to contact other organizations and see if interested.
- Next meeting September 3, 2003 at 6:30 PM.
- Margy motioned for adjournment. Marilyn seconded. Meeting adjourned at 7:50 PM.

VII. Next Board Meeting – 6:30 PM Wednesday, September 3, 2003

VIII. Meeting adjourned about 7:50 pm



Four quarts of oil can cause an eight-acre oil slick if spilled or dumped down a storm sewer!

WGWA Joint Convention Meeting Planning Update

Welcome to the launch of planning for next year's convention festivities! Our first meeting was Monday, July 14 in Stevens Point.

There is a small group of people who have already indicated an interest in assisting with the 2004 convention. I expect and hope this core group will grow in the near future and that others will take part in this planning effort.

Thanks everyone! Please mark your calendars accordingly and I'll be communicating with you all again in the near future.

T. Dudiak

WGWA sponsors a Study Group for the October 3rd Geology Exam

The first get together for the Geology Exam Study Group will take place at 4:00 pm on August 19th at the offices of NRT on 23713 W. Paul Road in Pewaukee.

Here are some good references for the exam:

The Wis. Dept. of Regulation and Licensing's "Professional Geologist" page is a good place to start: http://www.drl.state.wi.us/Regulation/applicant_information/dod195.html

ASBOG, the National Association of State Boards of Geology, has a site at: <http://www.asbog.org/> This is the entity that puts together the exam for all the participating states, including Wisconsin. It is a standardized test--the same test is given in all the participating states.

The entity that actually administers the test in Wisconsin is CS Human Resource Services, which has its web site at: <http://www.cps.ca.gov/>

The company which publishes the generally accepted study guide for the ASBOG exam--a guide our study group will be using--is REG Review, inc., at: <http://regreview.com/>

WGWA Spring Conference a Big Success!

The 2003 Annual WGWA Spring Conference, held on April 9 in Green Bay, was a big success! Approximately 70 attendees were treated to a series of excellent papers in two concurrent sessions--the first time we've *ever* done that!

In addition to the papers, Jon Standridge of the Wisconsin State Laboratory of Hygiene, presented an illuminating talk on, "Endocrine Disrupting Compounds and Other Pharmaceutically Active Substances In Groundwater," which opened the eyes of many in the audience jaded from more than a decade of concentrating on petroleum-related compounds.

Another first for WGWA was the solicitation of student papers, and poster sessions. Awards were made to the best in each of several categories:

Best Undergrad Poster, \$500

James Couch, University of Wisconsin - Parkside

Best Graduate Poster, \$500

Lee Ann Atkinson , Stephen Barrick , Drew Douglas, Andrew Mumpy, University of Wisconsin - Milwaukee

2nd Graduate Poster, \$250

Lisa Evenson, University of Wisconsin - Green Bay

Best Undergrad Paper, \$500

Randy Mentz, UW- Stevens Point

Best Graduate Paper, \$500

Jeff Wilcox, University of Wisconsin - Madison

2nd Graduate Paper, \$250

Lori Schmidt, University of Wisconsin - Milwaukee

2nd Undergrad Paper, \$250

Katie May Mogen, Carroll College

In addition to the WGWA conference itself, the next day, April 10, WGWA participated in putting on the first of what we hope will be a series of annual events, the "Where the Waters Meet" joint conferences. WGWA joined with the River Alliance of Wisconsin, the Wisconsin Association of Lakes, and the Wisconsin wetlands Association in this endeavor. Approximately 450 people attended. A morning plenary session discuss the water management issues each organizations thinks will be important over the next 25 years. This was followed by a dozen concurrent panel discussion sessions in the afternoon, on a wide range of interdisciplinary subjects. All involved said this first-ever joint meeting was a roaring success!

Planning is already underway for next "Where the Waters Meet" conference, to be held on Thursday, April 14, again in Green Bay. Our WGWA conference will be held the next day, Friday, April 15. Mark your calendars!



It is estimated that 250 million people are currently using the same water resources that 4 million people used 200 years

Fall Field Trip AIPG/Wisconsin Ground Water Association

The Wisconsin chapter of the American Institute of Professional Geologists and the Wisconsin Groundwater Association are planning a joint field trip on Saturday, October 4, 2003. The trip is open to families, and will feature a theme centered around geology. The trip will be a one day event set in the beautiful autumn hills of Devils Lake, Wisconsin.

The field trip will be conducted in the area of the Baraboo syncline, including the Devil's Lake area. We have the good pleasure to announce that UW geology professor, Robert Dott, and WGNHS Pleistocene geologist John Attig will lead the field trip. Bob and John are presently in the process of putting the finishing touches on a guide to the Roadside Geology of Wisconsin, which should come out in the first part of next year. Professor Dott, an expert on the history of geology, will feature the Baraboo syncline and John will expound his theory on the catastrophic creation of Wisconsin Dells.

The AIPG/WGWA planning committee is not dictating to Bob and John just where the field trip stops should be. That's part of the fun of this exercise, letting these two giants show us what they think is really neat! We have simply told them that the trip would begin at Devil's Lake State Park at 10:00 a.m. and end at the park at 5:00 p.m. What we do during that seven hours will be totally up to them. But is likely that, at the very least, the following stops to be made:

- The south shore of Devil's Lake
- Parfrey's Glen
- Ableman Gorge at Rock Springs
- The north side of the Ordnance Works (former Badger Plant)

The field trip will include motorcoach transportation (which will leave at 10:00 am), box lunch, and a catered barbecue dinner (that will begin at 5:00

pm). Two guidebooks, both published by WGNHS, are available as an optional purchase, and will be made available on the day of the trip. We will meet at the South Shore picnic area starting at 9:00 am on Saturday. A map of the park is attached. The bus will depart at 10:00 am for the field trip. We will return at approximately 5:00 pm to the park to have dinner (barbecue ribs and chicken) and discussion.

A registration form is included in this newsletter. On the form you will see a number of options, including one for the evening meal only. We want to encourage families to participate in this event. There are many other local features that some families may wish to partake of, such as the Circus World Museum in Baraboo, or the steam locomotive rides at Rock Springs, or just hanging out at the park for the day. You'll see that we have different pricings for different age groups: adults, students (including college students), and children 12 and under.

If you have any questions about the trip, contact AIPG program chair, D'Arcy Gravelle, at (262) 375-4750 or via email at dgravelle@kevengineering.com, or contact WGWA President Elect, Boyd Possin, at boydpossin@wgwa.org.

WE HOPE TO SEE YOU THERE!

Field Trip Reservation Form

Saturday, October 4, 2003

Fill out this form, and mail it along with a check in the appropriate amount, made out to "AIPG," and mail both to:

**Jayne Englebert, AIPG Treasurer
c/o MSA Professional Services, Inc.
1230 South Blvd., Baraboo, WI 53193**

Primary Attendee: _____ Phone: _____

Affiliation: _____

Mailing Address: _____

City: _____ State: _____ ZIP: _____

E-Mail: _____

Full trip (bus and two meals)

Number of adults: _____ H \$60 = _____

Number of students (13 and older, incl. college) _____ H \$40 = _____

Number of children (12 or younger): _____ H \$30 = _____

Evening Meal Only

Number of adults: _____ H \$20 = _____

Number of students (13 and older, incl. college) _____ H \$15 = _____

Number of children (12 or younger): _____ H \$10 = _____

Optional Materials

Geology of Sauk County, Wisconsin. Lee Clayton
and John W. Attig, 1990, 68 p. _____ H \$11 = _____

The Ice Age Geology of Devils Lake State Park.
John W. Attig., *et.al.* 1990, 28 p. _____ H \$4 = _____

Total Enclosed: _____

The trip will convene at the Visitor Center on the South Shore (see on-line park map at:
www.dnr.state.wi.us/org/land/parks/specific/devilslake/map.html).

Check-in will commence at 9:00 AM, and the trip, itself, at 10:00 AM. Both lunch and dinner will be provided. Dinner will be over by approximately 7:00 PM. Note that if you do not have an annual park sticker on your vehicle, you will be charged a \$5 daily fee for entering the park.

If you have any special requests (physical limitations, dietary restrictions, etc.), please note them here:

Questions? E-mail them to:

Wisconsin AIPG chapter Program Chair, D'Arcy Gravelle, at: gravelle@keyengineering.com, or
WGWA President-Elect, Boyd Possin, at: wgwanotes@wgwa.org

Presentation of the prestigious Stewardship Awards concludes a record-setting 25th Anniversary Wisconsin Lakes Convention

The Wisconsin Association of Lakes (WAL) honored 6 lake activists and supporters with the 2003 Lake Stewardship Award concluding the 2003 Lakes Convention, Silver Reflections, Golden Projections, on April 12. The nationally recognized Wisconsin Lakes Partnership, a collaborative effort between the Wisconsin Association of Lakes, the UW-Extension Lakes Program and the Department of Natural Resources, hosts the annual Lakes Convention. This year nearly 650 lake enthusiasts from across the state united at the Convention to learn about lake issues and network with other lake stewards with similar interests.

“This year’s Lakes Convention was one of the most successful in the Convention’s 25- year history,” stated Jim Brakken, WAL President. Brakken explained that the 2003 Convention saw record attendance, including over 40 exhibitors from Wisconsin and across the country, and offered a wide variety of seminars led by Wisconsin’s leading lake experts.



To close the Convention, the Wisconsin Association of Lakes presented 6 important individuals and groups with the 2003 Stewardship Awards. This award, which includes recognition by Governor Doyle, has been presented to outstanding stewards for the past 15 years. Each year, thousands of individuals spend countless hours in the work of lake stewardship and only a few are recognized for the efforts. Those who are nominated join a long and distinguished list of women and men whose dedication, vision and commitment ensure that Wisconsin’s legacy of lakes will be safe and secure for generations to come.

“The Stewardship Awards – the highest honor anyone can receive for lake protection in Wisconsin – were presented to individuals, groups, and businesses who show leadership and perseverance in working to protect our water,” commented Donna Sefton, Wisconsin Association of Lakes Executive Director. “This is just a small way to recognize them for their vital contribution in protecting Wisconsin’s legacy of lakes.”



Yvonne Feavel, a retired WAL Board member, was awarded the 2003 Stewardship Award under the “individual” category for her dedication as a member of the Long Lake Association, as a past President and Chairman of the Wisconsin Association of Lakes, as Chair of the Planning Committee for the North American Lakes Management Society 2001 Symposium, not to mention a number of other important organizations. Yvonne has contributed countless hours of her life in striving to ensure the protection of our legacy of lakes.

The 2003 Lake Stewardship Award Youth group winner was the **Lake Watchers Adopt-A-Lake Team**. The project is an extensive science enrichment program that involves students from first grade to high school in real work science and encompasses community service as a component of the program. The group has led important initiatives on the lakes such as mechanical aeration to maintain the fish population, storm drain stenciling, native plant growth in a storm sewer sediment basin, and the release of Galerucella beetles to control Purple Loosestrife.

Eco-Building & Forestry LLC was recognized as a Stewardship Award winner in the business category. Tom Girolamo, owner of Eco-Building and Forestry LLC, designs, installs, and maintains sustainable landscapes and lakescapes. His business aggressively researches, experiments with and applies new techniques to create permanent, environ-

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mentally friendly landscapes and lakescapes. Eco-Building & Forestry has donated substantial time and resources to support groups such as Washburn County Lake Fair, Manitowish Waters Lake Fair, and Friends of Portage County Lakes, plus countless other groups. Tom is a community leader in lake issues and he believes in, promotes, and practices the Stewardship we celebrate.

The Pigeon River Watershed Stakeholders Group was awarded under the “group” category for their work to plan, initiate, and complete work on a watershed-wide scale with the ultimate goal of improving water quality of Pigeon Lake. The group has sought many tools, including grants and funding, to complete a variety of management programs such as bank stabilization, easement protection, and community educational work. They continue to show outstanding commitment to the protection and restoration of Pigeon Lake and its watershed by developing a partnership with the local community, through education and installation of Best Management Practices.

Robert Korth was recognized with a Stewardship Award for his overwhelming abundance of public service. Bob has reached numerous communities and citizens through publications, inspirational photography, and meaningful presentations, many of which have been recognized internationally. For the past 12 years, Bob’s commitment to the UW-Extension Lakes Program has resulted in the heightened success of the Annual Lakes Convention, the Lake Leaders institute, and many other programs vital to the health of our lakes. Bob has been a true educator-teaching not only the basics of lake science, but how people can resolve conflicts—helping them to see the greater reasons why they must work together toward one important goal. He has empowered citizens and local lake communities with the knowledge, programs, materials and leadership skills they need to be more effective stewards of Wisconsin Lakes. Bob has opened more than our minds—he has opened our hearts to the wonders, the importance, and the needs of a healthy lake.

William Genthe was awarded the Lifetime Stewardship Award for his dedication to the protection of Big Cedar Lake’s water quality and wetlands. He spent thousands of hours working toward that goal. William helped form the Big Cedar Protection and Rehabilitation District and was elected as the Chairman of the Group which he held continuously for over 26 years until his death. His many accomplishments in protecting hundreds of lake and wetlands areas will live on for many future generations to appreciate and enjoy. William Genthe is missed; however, the legacy that he left behind will continue to speak volumes, speak loudly, and speak proudly of what one quiet man can do... not only for his environment, but also for his fellow mankind.

The Wisconsin Association of Lakes on behalf of the Wisconsin Lakes Partnership would like to thank the Stewardship Award winners and all those who make a positive impact on our lakes. Thanks is also extended to all those who made this year’s 25th anniversary Wisconsin Lakes Convention a highly beneficial and important event in protecting our waters.

*For more story information contact:
Donna Sefton, Executive Director
Telephone: 608/662-0923
WAL@wisconsinlakes.org*

Newsletter Advertising Rates

2.5" x 3.5" (business card)
\$20/issue \$60/annual

3.5" x 5" (quarter page)
\$35/issue \$100/annual

5" x 7" (half page)
\$65/issue \$175/annual

7" x 10" (full page)
\$125/issue \$320/annual

Current Job Listings

Employer:

Boart Longyear Company-Environmental
Drilling Division
101 Alderson Street
Schofield, Wisconsin 54476

Work Site of Job: Schofield Wisconsin Zone
Office

Pay: Salary and Bonus Plan

Duration/Hours Per Week: 50 Average

Shift/Work Days: 6:00 a.m. - 5:00 p.m.

Minimum Educational Requirements:

Related Degree Preferred

**Minimum Requirements for Professional Li-
censes/Certifications:** None

Required Experience:

Experience in Environmental Project Supervision

Other Required Qualifications :

Communication Skills, Computer Skills

Benefits Offered:

Bonus Plan, 401K Company Matched Savings
Plan, Life Insurance, Disability Insurance, Health
and Dental Insurance plans.

Company Profile:

Boart Longyear is a drilling contracting and supply
company. The Environmental Drilling Division op-
erates throughout North America with zone offices
in Wisconsin, Indiana, Minnesota, Massachusetts,
Nevada, Arizona, Alabama, North Bay, Hailybury
and Calgary Canada.

How To Apply:

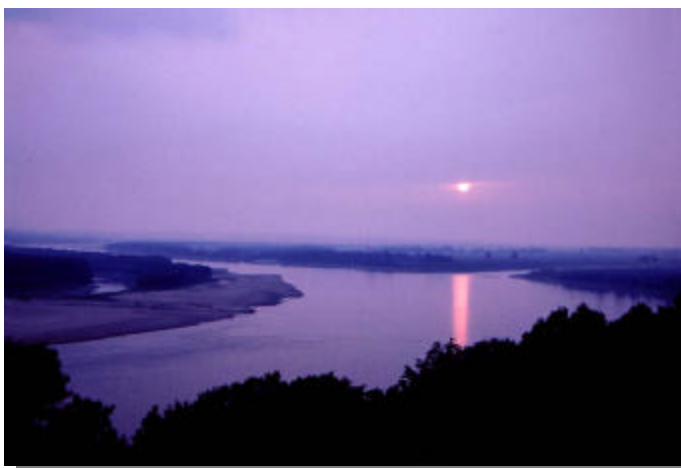
Send resume to Ron Thalacker-Central Regional
Manager at Boart Longyear, 701 Alderson Street,
Schofield, Wisconsin 54476 phone: (800) 236-4983

Other Comments:

Wisconsin Zone Manager: The ideal candidate will
have experience in the Environmental, Consulting
or Contracting Industry including supervision or
management of environmental activities or projects
including drilling. The duties include bidding, pro-
ject planning, scheduling, supervision, invoicing,
client contact and marketing. Training will be pro-
vided.



**The longest
river in the
United States is
the Missouri
River at 2,540
miles; the Mis-
sissippi River is
second at 2,340
miles.**



MODEL SPEAK...SEDIMENT TRANSPORT

I. INTRODUCTION

Triad Engineering Incorporated (Triad, 2003) was recently retained by a city in north-central Indiana to perform a stream condition assessment for the portion of a creek that is located downstream from the municipality's wastewater treatment plant (WWTP). One of the objectives of the assessment was to determine the lateral and vertical extent of an upper organic layer (treatment plant sludge) that was alleged to be a result of a discharge originating from the WWTP during an upset period that occurred in July, August and September 2002. To meet this objective, the stream condition assessment included a field investigation of sediment quality and profiling to determine the thickness of deposited sediment at 32 transects located in the creek and a river (which the creek discharges to), as well as development of a sediment transport model. The purpose for the modeling study was to qualitatively evaluate the potential for variations of stream flow to redeposit the sludge and other fine-grained or organic sediment, which were identified downstream from the city's WWTP, to farther downstream reaches of the creek and/or into the adjoining river. The following sections detail the modeling methods, assumptions, design, and results.

II. MODELING METHODS

The modeling effort was performed using the U.S. Army Corps of Engineer's HEC-6 program (USACE, 1993), which is a one-dimensional, movable boundary, open channel flow, numerical model designed to simulate and predict changes in river profiles resulting from scour and/or deposition over moderate time periods (typically years, although applications to single events are possible). The HEC-6 program was selected for use as a "screening model" (as opposed to a rigorous, quantitative analysis) so that an assessment of any potential problems and resultant mitigation efforts regarding sludge transport could be identified quickly and easily. HEC-6 is designed to simulate long-term trends of scour (erosion) and/or deposition in a stream channel that might result from modifying

the frequency and duration of water discharge and/or stage, or from modifying channel geometry. A river system consisting of a main stem, tributaries, and local inflow/outflow points can be simulated.

Stream channel geometry can be represented by up to 500 cross sections, which are specified by coordinate points (stations and elevations) and the distances between cross sections. Each cross section input is subdivided into two parts: the part that has a movable bed and the part that does not. The movable bed is constrained by the locations given for the left and right channel banks (fixed bed), which may or may not include the floodplains on each side of the channel. HEC-6 raises or lowers cross section elevations within the movable bed limits to reflect deposition and erosion.

Stream hydrology is defined by a continuous flow record that can be portioned into a series of steady flows of variable discharges and durations (approximating a water discharge hydrograph). For each flow, a water surface profile is calculated, which provides factors such as energy slope, velocity, and depth at each cross section. Potential sediment transport rates are then computed at each section.

Sediment transport rates can be calculated for grain sizes representing clay (less than 0.004 millimeters [mm]) to large boulders (2,048 mm). Deposition is allowed to occur in all wetted areas, even if the wetted areas are outside the movable bed limits. Erosion occurs only within the movable bed limits and will not be simulated beyond a preset streambed bottom elevation. Sediment transport potential is based upon the hydraulic and sediment characteristics of the channel alone.

Computed information from HEC-6 includes the total sediment discharge passing each cross section and the volume of deposits accumulated at each cross section from the beginning of the simulation. Sediment changes are calculated with respect to

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time and distance along the study reach for the following: total sediment load, volume and gradation of sediment that is eroded or deposited, armoring of the bed surface (coarsening of the streambed layer by removal of fine particles), and the cross section elevations. In addition, sediment outflow at the downstream end of the study reach is calculated.

III. MODEL ASSUMPTIONS

As with any mathematical representation of a natural system, various assumptions are required due to the limitations and practicalities of data collection and the uncertainties in natural system dynamics. The primary assumptions used for the project's sediment transport analysis are listed below:

- There was no sediment load entering the study reach from its upstream boundary;
- There was no sediment load entering or leaving the study reach from tributaries or other local inflows/diversions;
- Manning's n values for each cross section were generally constant for describing energy loss due to roughness and friction from channel/bank irregularities, vegetation, and stream curvature (only two Manning data sets were used to describe the energy loss for the 10 cross sections simulated);
- Contraction and expansion losses between cross sections were negligible; and
- As HEC-6 is designed to analyze long-term erosion and/or deposition, equilibrium conditions were assumed to be reached within each time step, or, in other words, changes in sediment and hydraulic conditions were assumed to be gradual, such as for large rivers with slow rising or falling hydrographs.

IV. MODEL DESIGN

The study reach comprised the portion of the creek from the confluence with the river up to a point approximately 1.3 miles upstream or near the WWTP. Ten of the 32 transects that Triad measured/sampled were utilized to describe stream channel

geometry in the model. Grain-size analyses from six creek locations were utilized to describe the texture and composition of movable bed sediments in the model. Mannings n values for stream energy loss were utilized from a 1987 HEC-2 model input file for the creek developed and calibrated by the Louisville Corps of Engineers for the Indiana Department of Natural Resources Division of Water (IDNR, 2003) to assist the County's floodplain management community in establishing base flood elevations and floodway limits and in evaluating projects in accordance with the Indiana Flood Control Act and the National Flood Insurance Program. Deposition and erosion of clay- and silt-size particles were simulated in the model. When available in the HEC-6 documentation, default values for sediment deposition were used for various sediment property parameters such as clay/silt specific gravities, weights when compacted, and compaction coefficients. However, erosion of clay and silt also required special information not provided by the HEC-6 documentation and included the shear stress threshold, the shear stress threshold for mass erosion, the erosion rate during mass erosion, and the slope of the erosion rate curve for mass erosion, which are typically measured by conducting laboratory tests on sediment samples collected from a study site. This information was obtained from previous sediment transport studies conducted by HydroQual, Inc. (2003) and Prachure and Mehta (1985). As a result, the only significant changes Triad made to the Louisville Corps of Engineers' HEC-2 calibrated input file consisted of replacing the Corps of Engineers stream profiles with new profiles measured by Triad.

V. MODEL RESULTS

The results from three HEC-6 simulations are presented in Table 1 (page 14) and discussed below. Simulations were conducted using three independent creek discharges: 1) 33 cfs, which is a mean flow recorded for the month of April for the years 1970 to 2001; 2) 365 cfs, which is a maximum flow recorded from February through March for the years 1970 to 2001; and 3) 1,045 cfs, which is the

(Continued on page 13)

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10-year peak discharge for the creek as reported by the Federal Emergency Management Agency (FEMA, 1984). The time step for each simulation was one day. As the modeling study was intended to be qualitative rather than quantitative, the movable bed thickness values in Table 1 should be viewed more so as a representation of the potential for erosion, deposition, or little/no change to the sediment column at the particular transect location rather than an actual thickness change.

For the 33 cfs simulation, negligible erosion (negative values) or deposition (positive values) of movable medium silt size and smaller sediment particles (0.031 millimeters [mm] and smaller) were predicted along the entire creek reach modeled. For the 365 cfs simulation, erosion of sediments as large as fine gravel size (8 mm and smaller) was predicted at the 0.837 river mile with lesser or negligible erosion and/or deposition of sediment occurring at locations farther upstream and downstream. For the 1,045 cfs simulation, erosion of sediments as large as very fine gravel size (4 mm and smaller) was again predicted at the 0.837 river mile with lesser or negligible erosion and/or deposition of sediment occurring at locations farther upstream and downstream. For qualitative comparisons, the sediment loads predicted at the downstream boundary of the model were 40 tons per day for a flow of 33 cfs, 3,657 tons per day for a flow of 365 cfs, and 5,339 tons per day for a flow of 1,045 cfs.

VI. FINAL COMMENTS

Sediment transport analysis results were consistent with observed hydrologic conditions that existed within the creek at the time of the stream assessment. The results of the analysis indicated that mobilization and re-deposition of sediment is a dynamic process and varies with stream flow. In addition, significant deposition of solids appeared to occur in the lower reach of the creek upstream of the confluence with the river even during periods of high flow, thus minimizing sediment transport to

the river, which is known for its excellent instream habitat features, diverse fish population (including rare spotted darter species [INHS, 1985]), and 57 species of unionids (of which seven are listed as federally endangered and five are listed as species of special concern [USFWS, 1998]).

Dave Nader, Triad Engineering Incorporated
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REFERENCES

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- Illinois Natural History Survey, 1985, *Status and Critical Habitat of Several Rare Darters in Indiana*.
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- U.S. Fish and Wildlife Services, 1998, *Defining Point Source Threats to Rare and Endangered Mussels*, FFS ID#: 3F23

The editorial board is soliciting WGWA and non-WGWA members to provide modeling articles and reviews for Model Speak. To submit articles or provide suggestions for articles you would like to see, please contact Lee Trotta, (262) 695-4993, or email ltrotta53072@yahoo.com

TABLE 1
SEDIMENT TRANSPORT MODELING RESULTS
WALNUT CREEK
WARSAW, INDIANA

SIMULATED HYDRAULIC CONDITIONS			PREDICTED CHANGES TO MOVABLE BED THICKNESS (ft; from upstream [1.32] to downstream [0.03])										Largest Grain Size Moved
Walnut Creek Flow ³ (cfs)	Duration (days)	Tippecanoe River Stage (ft)	1.320 river mile (T-28)	1.239 river mile (T-30)	1.115 river mile (T-8)	0.837 river mile (T-5)	0.617 river mile (T-1)	0.449 river mile (T-23)	0.302 river mile (T-19)	0.176 river mile (T-16)	0.119 river mile (T-14)	0.033 river mile (T-12)	
33	1	801 ¹	-0.01	-0.01	-0.03	0.00	-0.01	+0.03	+0.01	0.00	0.00	0.00	medium silt
365	1	802 ¹	-0.06	-0.05	-0.02	-1.20	+0.08	+0.05	-0.03	-0.12	-0.12	-0.05	fine gravel
1,045	1	808.2 ²	-0.09	-0.05	-0.04	-1.54	-0.19	+0.05	+0.02	-0.01	0.00	+0.07	very fine gravel

NOTES:

Negative (-) bed thickness changes indicate sediment erosion; positive (+) bed thickness changes indicate sediment deposition.

1 - Estimated value

2 - Kosciusko County Flood Insurance Study Report (FISR; 1984)

3 - Flow descriptions are as follows: 33 cfs (mean from April 1970-2001 record)

365 cfs (maximum from February through March 1970-2001 record)

1,045 (10-year peak discharge as reported in FISR)

Grain size classifications used in model are the following: clay < 0.004 millimeter (mm); very fine (v.f.) silt 0.004-0.008 mm; f. silt 0.008-0.016 mm; medium (m) silt 0.016-0.031 mm; coarse (c) silt 0.031-0.0625 mm; v.f. sand 0.062-0.125 mm; f. sand 0.125-0.25 mm; m. sand 0.25-0.5 mm; c. sand 0.5-1 mm; v.c. sand 1-2 mm; v.f. gravel 2-4 mm; f. gravel 4-8 mm; and m. gravel 8-16 mm.

News from the Treasurer

Marilyn M. Weiss

ACCOUNT SUMMARY (April 1 - June 30, 2003)

BEGINNING BALANCE April 1, 2003			\$21,078.09
	DEPOSITS	WITHDRAWALS	BALANCE
MEMBERSHIP			
2003 Membership Dues/Refunds	795.00		
2004 Membership Dues/Refunds			
Mailings			
Subtotal	795.00	0.00	21,873.09
FALL FIELD TRIP (2003)			
Registrants / Deposit			
Miscellaneous Costs			
Subtotal	0.00	0.00	21,873.09
2003 CONFERENCE			
Registrants / Deposit / Refunds	1,850.00	50.00	
Miscellaneous Costs		2,284.90	
Subtotal	1,850.00	2,334.90	21,388.19
MAY HAZWASTE CONFERENCE			
Registrants / Deposit	1,310.00		
Miscellaneous Costs		1,289.57	
Subtotal	1,310.00	1,289.57	21,408.62
NEWSLETTERS			
Newsletter 1		400.00	
Subtotal	0.00	400.00	21,008.62
WEB SITE	0.00	130.00	20,878.62
MISCELLANEOUS			
Board Meetings		205.20	
Bank Charges		10.00	
Office Supplies			
Post Office Box			
Scholarships / Donation		3,065.00	
Miscellaneous	311.46	331.46	
Subtotal	311.46	3,611.66	17,578.42
	DEPOSITS	WITHDRAWALS	BALANCE
ENDING BALANCE June 30, 2003	\$4,266.46	\$7,766.13	\$17,578.42

GROUNDWATER GUARDIAN PROGRAM

Let me explain the "Groundwater Guardian" program. The program is based on the establishment of interested Groundwater Guardian communities. In the Wisconsin chapter alone, there are ten such communities (Waukesha, Portage County, Miladore Area, Marshfield Area, Marathon County, Green Bay, Eau Claire County, Dunn County, Chippewa Falls, and Calumet County) and more join every year. The program,

- supports, recognizes, and connects communities taking voluntary, proactive steps toward comprehensive groundwater protection
- educates and empowers local citizens to tackle water issues
- builds partnerships within communities to work toward a common goal or project

In support of these communities, there is a State Coordinator (Denise Kilkenny-Tittle) and several organizations volunteer as Groundwater Guardian Affiliates. I am the Groundwater Guardian Committee Chair for one of these Affiliate organizations, the Wisconsin Ground Water Association. Our committee offers advice, encouragement, and occasional speakers to these communities. Several related articles (including most recent meeting minutes) follow to give you a better flavor of the effort. If outreach is your favorite thing, you may want to join this committee.

Lee Trotta

Meeting Meetings

Meeting began at 5:30 p.m. via teleconference. Present were Boyd Possin, John Jansen, Lee Trotta, Denise Kilkenny-Tittle, and Janis Kesy. Absent and excused was Doug Cherkauer.

Lee thanked Boyd for providing the new phone numbers for teleconferencing. The number is 1-888-387-8686 and the room code is 4345023. The moderator PIN remains the same.

Denise informed us that she had a conflict and would have to leave early, so we moved up the 2004 Festival up to the first agenda item. Denise had just sent an email, however, so her email comments on other agenda items are also inserted in these minutes.

1. Groundwater Festival 2004 (Denise)

The 1st Annual WI GW Festival was a total success on Friday. The "general public" day on Saturday was more work for less turnout, but a good start. The people I have talked to so far support doing only the "school day" part of the festival in 2004. The general consensus of the Planning Committee is that we should offer the Festival again in 2004 in SE Wisconsin. I think all the groundwater lessons could be used again. However, we could change the 4th track to a new theme (the theme of the 2nd annual GW Festival) and come up with one or two new activities. There are possibilities to partner with other groups who have offered water forums or festivals, too. Maybe one of these groups would organize the "General Public Day."

Several on the Planning Committee have indicated they will not be able to help with the 2004 event. A new group of planning volunteers will be needed. Although Lee volunteered to help early and has been making suggestions, he has been assigned no particular position to this point. We must quickly assign committee chairs/coordinators for fundraising, advertising, and volunteer coordinator. Volunteer coordinator will lead the search for Lesson Leaders from High Schools in need of public service assignments for their students. Boyd questioned whether high school students would have the background to be effective Lesson Leaders and asked how many lessons are to be held concurrently. Denise indicated there were 20 concurrent lessons each lasting 45 minutes several times during the day. She also so no reason not to substitute professionals in the Lesson Leader roles if available. Boyd commented that our membership ought to be able to cover the Leader positions necessary.

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We thanked Denise for her update and she left. Afterwards we continued the discussion as a group anxious to jump in and help even before assignments are made. Group consensus was we recommend to the Board that WGWA should support the 2004 GG Festival. Poor WGWA attendance at the 2003 Festival was blamed on travel distance, poor economy, and lack of advance notice. We realize that Denise is spread a little thin right now and would probably appreciate immediate progress on the important task of picking a site. Carrol College, the UW-Milwaukee, and Waukesha County Technical College (WCTC) have been mentioned as possibilities. John mentioned the UW-M received a \$5 million Carnegie grant for better outreach and may see hosting the Festival as part of this effort. Lee confirmed that the former UW-M president who championed this effort was in the news last night taking a new job in Connecticut. Boyd mentioned that the work sessions were held outdoors in tents which were a block apart last year (too far apart in his opinion). It was thought that the work sessions could instead be held indoors, based on the reality of available outdoor space in SE Wisconsin. The timing of the festival in May was discussed in context of it being hard to find enough room if school is in session. We must check elementary school end of session dates and college Spring Break schedules. As Doug may be out-of-town for awhile, Lee volunteered to make initial contacts at the UW-M with the Milwaukee Idea Program and Tim Grundl. Lee will also contact WCTC. John volunteered to contact Joe Piatt at Carroll College about hosting the site and Spring Break schedules.

2. Liaison Reports:

Milladore Area (Lee) - The Milladore Area lies between Stevens Point and Marshfield. At their last meeting they tried to convince the Town of Sherry to join their group. Sadly they said "No" because the people of the township were concerned about the DNR being involved. They will meet again on August 5, 2003, at 7:00 PM in the Village Hall and discuss what is available in grant money for well abandonment. I asked if his Group had ever been able to witness a proper well abandonment and he

said they had not yet done so. I then offered to try to arrange such an opportunity. Boyd suggested calling Dave Haupt of Haupt Well Drilling.

Waukesha Group (John) - According to Joseph Piatt, the Group is active with 2 or 3 events per year, but needs more participation. John suggested getting help from several water utilities to organize and finance some events, including events targeted at adults. Mary Adelmeyer of the Waukesha Utility is a member of GG. Dan Duchniak, Utility Manager, has not yet returned John's call. Waukesha needs to PR well siting outside city limits and their cause may be helped by bringing in respected USGS speakers through a GG event.

Calumet County (Janis) - Janis was able to contact the lady Lee listed, but she says she is not the GG contact. However she reports the Group is active with meetings every 2 months. A groundwater testing program is being coordinated. Janis obtained the name of the actual GG contact and will call him soon.

Green Bay Group (Boyd) - The Group is inactive although their leader (a DNR Nature Center employee) does things on her own. There are many hot groundwater issues in the area. The Central Brown County Water Authority has been meeting weekly and Boyd attends as an interested citizen. The DePere City Engineer is a member of the Authority and they don't really need outside support. Lee suggested changing the recruitment focus of a reactivated Green Bay Group to involve a high school or a group of retired environmentalists rather than the busy professional crowd.

3. Environmental HS Conference:

Lee outlined the request to support the 2003 Governor's Conference with a minimum contribution of \$1,000 in financial support or in-kind goods or services. The consensus of the group was to recommend to the Board that we would support this

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only if 50% or more of the donation would be allowed in meaningful in-kind service. Lee should call Deb Engel-Di Mauro or Randy Champeau before giving this recommendation to the Board to be sure we can donate our speakers as in-kind service rather than just janitorial or food support. John had to leave at this point.

Denise has set up the WIGG travel display at this conference the last couple of years. "Deb wanted me to present a session on groundwater, too, but her proposal deadline was a couple of months ago. I told her that if I wasn't working, then I would be free to present. I told her I could be a "back-up" or "fill-in" for no shows or cancellations." Denise thus indicates that the chance for meaningful in-service participation may be over.

This conference draws HS students from around the state. These students are usually "go getters" and care about the environment. HS students are ready and able to take action. Denise thinks that the schools and students who attend this conference would be a great place to start promoting GG to schools.

4. Speaker List (Lee):

The Speaker List, as so far compiled, is attached. It includes a total of only five (most of our Committee plus George Kraft and Christine Mechenich). I'm sure Janis and the WGWA Board Members would make good speakers and should again be solicited. Other members could also be solicited directly from a list that Boyd will provide. We only ask speakers to present when at a convenient distance and time. The form requested a topic, audience, and presentation format.

5. Article ideas for the WGWA newsletter:

Denise has provided copious quantity of fodder for newsletter articles about Groundwater Guardian. The whole issue could be dedicated to GG. What does the committee think is most important to include in the newsletter? The consensus was to include meeting minutes and a summary of what the

GG Group is without worrying about how many pages are taken up.

Other possible technical articles suggested included one Boyd wants to write on use of Adobe Acrobat, one from some unknown engineering company about an industrial well contaminated by the deep tunnel, and one from Amy Tetwiler about the Edgerton Decision concerning whether insurers need to cover contamination incidents.

6. Leadership Institute:

Denise sent an email to Lee last week. Lee copied the info to Committee members to solicit interest. The Institute is 5 days at House on the Rock and costs \$100. Deadline for registering is July 31st. Boyd already volunteered to attend and write a summary article for the newsletter. As Editor, Lee accepted his offer.

7. Next meeting:

Thursday, August 21st at 5:30pm (avoids several known conflicts). Adjourned around 6:15pm.

Committee Event

Each year the WGWA Groundwater Guardian Committee must plan and fulfill a Results Oriented Service. Our new Results Oriented Service this year has now been successfully completed. We helped notify Wisconsin teachers of a special opportunity to learn interesting teaching modules on groundwater. We solicited quality instructors and provided a couple from our affiliate group. The "Groundwater Institute" took place June 25 and 26 at the Sta-Rite plant in Delavan and was received enthusiastically.

Speaker/Topic List

Here is a sampling of the speakers available from among the WGWA membership. With a membership of several hundred, we should have a longer list. So don't be shy. Use these examples to submit your own topics for the "Speakers List" to the editor at lectrotta53072@yahoo.com.

Name: John Jansen
Employer: Aquifer Science and Technology

Topic/Audience/Medium:

1. Water Supply Issues in Wisconsin/ Adults or high school/Powerpoint
 2. Critters, Plants, People and Groundwater/School age children/Powerpoint
 3. Practical Well Siting/adults or high school/Powerpoint
 4. Groundwater Quality issues in Wisconsin/Adults or high school/ Powerpoint
- City of Residence: West Bend

Maximum miles you are willing to travel to give a presentation: 300
Preferred method of contacting you (list e-mail or phone): JJansen@Ruekert-Mielke.com

SPEAKER/TOPIC LIST FORM 7-7-3

Name: George Kraft
Employer: University of Wisconsin - Stevens Point / University of Wisconsin - Extension

Topic/Audience/Medium:

1. General groundwater/water resources
 2. Groundwater quantity
 3. Nonpoint pollution
- (Add more, if you like!)

City of Residence: Stevens Point
Maximum miles you are willing to travel to give a presentation: Most anywhere when schedule permits
Preferred method of contacting you (list e-mail or phone): gkraft@uwsp.edu

SPEAKER/TOPIC LIST FORM 7-7-3

Name: Lee Trotta
Employer: Triad Engineering

Topic/Audience/Medium:

1. Radioactivity in Wisconsin Groundwater/Adults or high school/Powerpoint
2. Caddie Woodlawn's Geologic field trip /School age children/outdoor mobile lecture
3. Well Rehabilitation/adults or high school/Powerpoint
4. Geologic Indicators of Groundwater Quality in Wisconsin and Illinois/Adults or high school/ transparencies
5. Passive Groundwater Sampling/adults/ transparencies
6. Estimation of Groundwater Use/adult or high school/Powerpoint

City of Residence: Pewaukee
Maximum miles you are willing to travel to give a presentation: 100
Preferred method of contacting you (list e-mail or phone): lectrotta53072@yahoo.com

SPEAKER/TOPIC LIST FORM 7-9-3

Name: Boyd Possin
Employer: Environmental Compliance Consultants, Inc.

Topic: When it's not raining, and the snow isn't melting, how come the rivers keep flowing? Where's all that water coming from?
Audience: Can be adjusted to any age group
Medium: Blackboard or whiteboard

City of Residence: De Pere
Maximum miles you are willing to travel to give a presentation: Anywhere in Wisconsin
Preferred method of contacting you (list e-mail or phone): boydpossin@eccinw.com or 920-606-0323

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SPEAKER/TOPIC LIST FORM 7-11-3

Name: Christine Mechenich
Employer: Central WI Groundwater Center until 8/1/03

Topic/Audience/Medium:

1. Groundwater Basics for kids or adults using the sand-tank model or powerpoint or transparencies depending on group size
2. Drinking Water Quality Issues for private well owners for adults using powerpoint or transparencies
3. Risk Assessment for Drinking Water for adults using powerpoint or transparencies

(Add more, if you like!)

City of Residence: Stevens Point
Maximum miles you are willing to travel to give a presentation: ~60
Preferred method of contacting you (list e-mail or phone): cmech374@uwsp.edu

WIGG Award Ceremony

A small award ceremony occurred just prior to & during lunch. Chris Mechenich and Ron Hennings explained the application process in which the Center for Watershed Science and Education GG Affiliate team reviewed the submissions for the WI GG Award Program. For this first year, they chose to award two team awards. The two teams will share a wooden plaque in the shape of Wisconsin. In addition to the plaque, each team member received an award certificate. Meeting attendees partook in tasty cake that was decorated with the WIGG logo.



The winners were:

1. Rock River Coalition GG Affiliate Team: They received one of the Wisconsin Groundwater Guardian team awards in recognition of their work on an award-winning karst brochure and display, four well abandonment demonstrations, and writing a grant to develop a GFLOW computer model of the basin. They have brought together diverse interests to work on groundwater issues in the basin.

Team members include: Paula Allen, DATCP; Dennis Bries, Farm Bureau; Jim Congdon, Upper Rock Water Team Leader; Laurie Lambert, Dane County LCD; Dave Neuendorf, Dodge County UWEX; Mark Krumenacher, GZA Consulting; Rich Moen, Liesch Environmental Services; Ron Curtis, DNR Upper Rock Water Supply; Ruth Johnson, DNR Rock River Basin Planner; Rick Wietersen, Rock County Health Department; Dave Johnson, DNR Central Office; Ed Morse, Rural Water Association; Ken Johnson, Lower Rock Water Team Leader; and Suzanne Wade, Rock River Basin Educator, who was present to receive the award.

2. Portage County Groundwater Education Outreach Team: The second team award went to the Portage County Schools team of Heidi Hoover, Amanda Crowe and Denise Kilkenny-Tittle. They have trained 20 volunteer teachers who went into 5th, 6th and 7th grade classrooms in Portage County and brought groundwater education to over 300 students in 2002-2003 school year.

Wrap-Up

Denise reminded and asked each GG team to send her electronic or hard copies of materials for ROAs/ROs to place on the WIGG website. Examples of materials could be water festival schedules, lesson plans, articles, etc. Denise will be updating and adding information to the WIGG website this summer. Please help her with the endeavor!

The meeting was adjourned at 3:30pm.

The 2003 Board, Committee, and Area Coordinators

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Area Coordinators

We are looking for coordinators in many of the following areas. If you are interested, please contact Boyd Possin.

Western Area

(LaCrosse, Black River Falls, Eau Claire, Chippewa Falls, surrounding area)
Position Open.

Southern Area

(Madison and surrounding area)

John Tweddale

BT²

Phone: 608-224-2830 and 608-224-2839

jtwweddale@bt2inc.com

North Central Area

(Stevens Point, Wisconsin Rapids, Wausau, Rhineland, surrounding area)

Tod Roush

Maxim Technologies

Phone: 715.845.4100; Fax: 715.842.0381

ttroush@maximusa.com

Mark Strobel

Earth Tech, Inc.

Phone: 715-342-3022; Fax: 715-341-7390

mark.strobel@earthtech.com

Northeast Area

(Green Bay, Appleton, Oshkosh, Fond du Lac, surrounding area)

Position Open.

Southeast Area

(Milwaukee, Sheboygan, Racine, Kenosha, surrounding area)

Scott Brockway

Tetra Tech EM

Phone: 262.821.5894 X232; Fax: 262.821.5946

brockws@ttemi.com

Judy Fassbender

Applied Environmental Solutions, Inc.

Phone: 414-507-5571; Fax: 262.560.1963

gofish@globaldialog.com





Join the Wisconsin Ground Water Association Today!

**WISCONSIN GROUND WATER
ASSOCIATION MEMBERSHIP
APPLICATION/RENEWAL FORM**

Please take a few moments and become a member of, or renew your membership in, WGWA. Annual dues are \$15 for students, \$30 for individuals, and \$25 per person for corporate memberships of six or more. Dues are payable to "WGWA." Complete the following form and send, with check, to:

**Wisconsin Ground Water Association
P.O. Box 8593
Madison, WI 53708-8593**

Individual Membership: Regular Member: ___ \$30 Student Member: ___ \$15
Name: _____ Title: _____
Firm/Agency: _____
Mailing Address: _____
City, State, ZIP Code: _____
Telephone Number: _____ Fax: _____
E-Mail: _____

Are you interested in participating in any WGWA Committees?

___ Newsletter ___ Membership ___ Web Site ___ Legislation ___ Program & Education
___ Please check if you do not wish to be listed in a WGWA membership directory.
___ Please check if you don't have e-mail access and need to receive the *WGWA Newsletter* via regular mail.

Corporate Membership Discount (six or more individuals): ___ \$25/individual
Firm: _____
Mailing Address: _____
City, State, ZIP Code: _____
Telephone Number: _____ Fax: _____
Corporate Individuals (include each individual's e-mail address, if available. Attached additional page if necessary):

Name	Title	E-Mail
1.) _____	_____	_____
2.) _____	_____	_____
3.) _____	_____	_____
4.) _____	_____	_____
5.) _____	_____	_____
6.) _____	_____	_____

___ Check here if your company does not wish to be listed in a WGWA membership directory.
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