Wisconsin Ground Water Association Newsletter

INSIDE THIS ISSUE:

President's Message

Well, folks, this is--finally!--my swan song as WGWA President. I have enjoyed, immensely, my four years of service to this organization. Along the way, there have been small disappointments but also small victories.

Among the victories are a firming up of a relatively new tradition in WGWA's two-decade history, and that is the annual field trip. This year was the first since 2000 that I did not play a major role in setting up and conducing the trip, and, to my delight, it came off very well. WGWA President-Elect Dave Nemetz, and his committee, are to be commended

I am proud of WGWA's strong support of Wisconsin's Groundwater Guardian groups, and the annual Groundwater Festival. These activities in the K-12 arena, are nothing short of wonderful. I recommend all of you to jump in and participate.

I am proud of the quality of our excellent newsletter, Lee Trotta and Joan Viney have brought us into a new era of publishing it on line at far less cost than the old hard copy, thus saving our precious funds for other activities.

I am proud of the effort put in by our annual conference planning teams, and the quality of the technical papers presented. But I am disappointed in the level of participation at those conferences by most of our members. Frankly, those of you who do not find a way to participate are missing a great annual opportunity to refresh your technical skills. Besides, it's fun to spend a day hobnobing with all your colleagues--"way story" heaven!

I also think we have a long way to go in terms of our efforts to penetrate that college and university campuses around the state. Do you realize that more than a dozen schools now offer hydrogeology courses? (That's a far cry form those days back in the Pleistocene, when I was in grad school at Madison, where only four schools IN THE NATION were offering environmental hydrogeology courses!) We have made a dent in terms of getting students present papers at our annual conference, but we could be doing so much more.

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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 1st quarter of 2005 newsletter is February 15, 2005.

(Continued from page 1)

To conclude, I'd like to thank all the wonderful folks in the WGWA leadership with whom it has been my pleasure to serve these past four years. I encourage you to jump in there and run for the elective offices, or contact any of the officers and let them know you'd be interested in serving on one various committees, or serve as an at-large board member. It is a lot of fun, a great way to make new contacts, and is not nearly as much work as you might think. The cost-benefit ratio is very favorable!

So...thanks to all of you for letting me serve, and see you somewhere downgradient!

Boyd Possin, P.G.

Name that Stop Contest!

Contest open to all WGWA and MGWA members, except those on the field trip planning committee.

At which field trip stop were participants atop the highest cliff (measured in feet above the bottom of the outcrop, not in elevation). Winner will recieve an 8 X 10 print of their favorite field trip photo amongst those shown in the newsletter. Send your guesses to the editor at lctrotta53072@yahoo.com. The first correct answer giving both Day number and Stop number wins (see route maps)!

"Nailing" Arsenic-Tainted Water

(Excerpted from *Science News*, Vol. 165, No. 23, June 5, 2004, p. 366.)

Minnesota Ground Water Association and Science News

At recent joint meeting of the American and Canadian Geophysical Unions in Montreal, field tests in Nepal were reported that suggest that people who live in areas with arsenic-tainted aquifers may be able to purify their drinking water by passing it through a low-cost, low-tech filter with a simple active ingredient—a few handfuls of iron nails.

Susan Murcott of the Massachusetts Institute of Technology reported that in the Terai region of southern Nepal, about 90 percent of the residents get their drinking water from wells and that more than 500,000 of the region's inhabitants consume water with arsenic concentrations that exceed 10 micrograms per liter.

BED OF NAILS. Up to 96 percent of the arsenic in tainted groundwater can be removed by this filter made of iron nails. photo credit: *Murcott*

The two-stage filter is made of concrete molded around a simple rectangular form. Water poured into the top of the filter passes through a tray that contains a few kilograms of iron nails—whose chemical action scours the arsenic from the fluid—and then collects in a sand-filled bottom compartment. When the water is drawn out of the sand, sediment particles and many microbes are left behind. Data gathered during field tests of 250 such filters indicate that they remove more than 96 percent of the arsenic from tainted water when flow rates don't exceed 30 liters of water per hour. These simple devices can even be made using large plastic garbage cans.

References:

Murcott, S., *et al*. 2004. Implementation of the arsenic biosand filter in Nepal. Joint Assembly of the American and Canadian Geophysical Unions. May 17-21. Montreal.

WHAT TIME IS IT?

IT'S TIME TO RENEW YOUR WGWA MEMBERSHIP!

Calendar of Events

- Dec. 12-15: **NGWA Ground Water Expo**, Las Vegas, Nevada. More info, www.ngwa.org/e/expo/0412126010.shtml.
- Jan. 12-15, 2005: **Wisconsin Water Well Assoc. Annual Conference**, Kalahari Resort, Wisconsin Dells, WI. More info, http://www.wisconsinwaterwell.com/convention.html.

Groundwater Guardian

The Center for Watershed Science and Education (UW-Stevens Point) in coordination with the Education Subcommittee of the Groundwater Coordinating Council has developed a Wisconsin Groundwater Directory. The directory is intended to be a general guide to help those looking for information on various groundwater topics locate the appropriate agency or resources.

Contact information is provided for issues including data collection and analysis; well construction, permitting, abandonment and compensation; drinking water supply and testing; groundwater protection and landuse; and others. The directory also identifies groundwater activities by agency, lists available educational resources and includes contact information for local, state and federal agencies plus nonprofit organizations with groundwater responsibilities.

The directory can be found on the Central Wisconsin Groundwater Center's webpage at http://www.uwsp.edu/cnr/gndwater.

Newsletter Advertising Rates

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

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$35/issue $100/annual

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

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$125/issue $320/annual

Caffeine: A New Pollution Indicator

Due to heavy rains or other factors, excess wastewater may pass through a treatment plant untreated and into streams and other water supplies. When this occurs, health officials currently test the water for fecal coliforms to determine the amount of possible hazardous contaminants that could be entering downstream. The efficacy of this test method is limited by a short sample hold time, a short target organism lifespan, and the possibility of contamination from nonhuman sources such as livestock.

Researchers in Switzerland recently determined that using caffeine as a wastewater indicator is an effective technique that water treatment operators can utilize in monitoring water quality and wastewater treatment efficiency. Many other chemical indicators of human waste such as prescription drugs and personal care products have been considered for use as possible tracers, but break down more readily during the treatment process.

Large amounts of caffeine are consumed and discarded annually into sewer systems via human excretion or by disposal into drains. Although approximately 99 percent of contaminants are removed from wastewater at sewage treatment plants, caffeine is so abundant and its chemical structure so stable that it can remain at detectable levels in treated water. Suggested sampling for caffeine in water requires a one-liter amber glass bottle preserved with hydrochloric acid 1:1 (2 milliliters per 1 liter) in duplicate if mass spectrometry is desired.

The preceding information appeared in Aero Environmental Tech Tips, a free program distributed by Aerotech Environmental Laboratories. To subscribe, send an email to aeltechtips@aerotechlabs.com with the subject "Add Environmental Tech Tips." For more information on caffeine sampling in water, contact Aerotech's Environmental Project Manager at 866-772-5227.

Renew your WGWA Membership

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Milwaukee Hearing Quotables from "Great Lakes Forever"

On Tuesday September 28, 2004, the Wisconsin DNR hosted hearings on the Great Lakes Basin Water Resources Compact in Milwaukee. The meeting was one of five planned for the state on this important Great Lakes issue. Turn out was excellent, with more than 120 concerned citizens filling the standing-room only space at the State Fair grounds.

More than 30 citizens chose to speak, including representatives of several conservation groups, sporting groups, and the cities of Milwaukee, New Berlin and Racine. Their comments, while supportive of the draft agreement, were overwhelmingly in favor of strengthening the agreement and protection of the Great Lakes as a whole. Water conservation and habitat protection were strongly encouraged, with a sense of urgency beyond any policy timelines - these people wanted action now.

Several citizens made particularly strong statements, I offer their exact quotes here as anonymous and heartening statements.

"No other place in the world has it better than we it here. Please, do this right the first time, because we won't get a scecond chance.

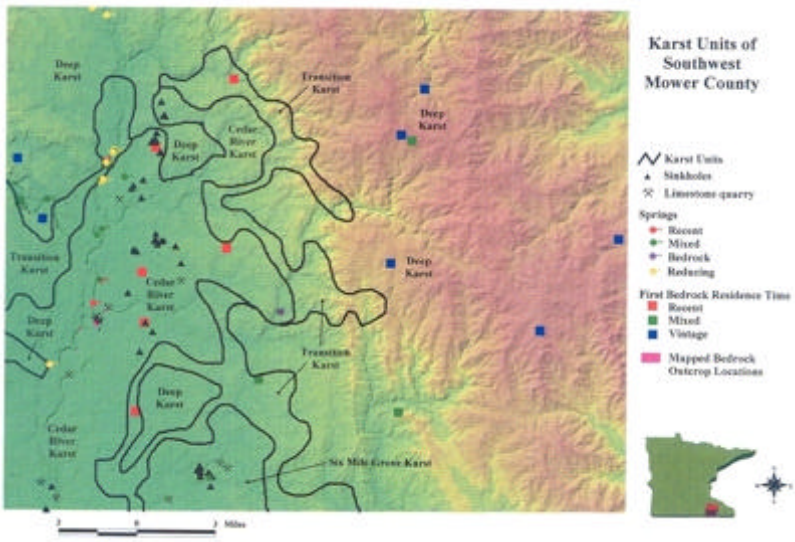
I'm from south Texas where people didn't manage their water resources very well. That's why we moved up here." The speaker went on to explain that his home town is now, literally, a ghost town because the aquifer was depleted by poor management and a lack of conservation.

And finally, one longtime advocate of the Lakes reminded us of our individual responsibility and called on the crowd, the DNR, and the Council of Great Lakes Governors to "challenge the region to do conservation

Karst unit mapping using geographic information system technology, Mower County, Minnesota, USA

ABOVE ARTICLE EXCERPTED (WITH PERMISSION) FROM: Jeffrey A. Green, William J. Marken, Calvin E. Alexander, *et al*, 2002, Karst unit mapping using geographic information system technology, Mower County, Minnesota, USA : Environmental Geology, Vol. 42, Publisher: Springer-Verlag, **pp. 457 - 461**

In southeastern Minnesota's Paleozoic carbonate sedimentary bedrock, karst feature and karst flow mapping have been going on for nearly 30 years (Giammona 1973; Wopat 1974). Combining field mapping with GIS technology has allowed us to create a karst unit map. These karst units were delineated based on a variety of criteria including karst feature locations, dye tracing, depth to bedrock, bedrock type and, for the first time in karst mapping in Minnesota, included landscape morphology. Converting this information into GIS coverages allowed us to more easily determine the nature and extent of the karst units.



A portion of the karst unit map for the county is shown in Fig. 4. Based on our model, we have delineated a number of distinct karst units. If we had followed the existing sinkhole mapping protocol, much of this part of the county would have been mapped as either low probability (areas underlain by carbonate bedrock with greater than 50 ft of surficial material) or low to moderate probability (areas with isolated sink-

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Hydromorphic and Hydrogeologic Characteristics	Karst Hydrogeomorphic Units							
	Shallow Karst Units						Limestone plain	Covered
	Cedar River plain	Deeer Creek plain	Le Roy plain	Ostrander plain	Spring Valley plain	Le Roy Upland		
Depth to bedrock (feet)	0-75	0-50	0-25	0-50	0-50	0-50	0-75	greater than 50-75
Karst feature	sinkholes, springs, solution voids, quarries	sinkholes, stream sinks, springs, solution voids, quarries	stream sinks, sinkholes, springs, solution voids, quarries	sinkholes	sinkholes, stream sinks	sinkholes, solution voids, quarries	sinkholes, solution voids, quarries	no surface features, but subsurface cavities and blowing wells
Primary bedrock	Bassett Member	Spillville Formation	Lithograph City Formation	Bassett Member, Spillville Formation	Spillville Formation	Lithograph City Formation, Coralville Formation	Coralville Formation, Bassett Member, Spillville Formation	Coralville Formation, Bassett Member, Spillville Formation
Percentage of county	11	2	less than 1	less than 1	2	less than 1	20	65

(Continued from page 5)

hole clusters with an average of one sinkhole per square mile). This approach is constrained by the mapper's ability to locate sinkholes and other surface karst features. Using our karst unit approach, we have divided the landscape into annotated karst units. These units have distinct characteristics. For example, the Cedar River karst (Fig. 4) is a relatively flat plain dissected by the Cedar River and its tributaries. Surface features include sinkholes (both shallow bowls and collapse features), springs, exposed bedrock solution features and quarries. Potentiometric surface measurements have shown that groundwater flows to the Cedar River or its tributaries where it discharges from springs. Groundwater residence times at springs and wells range from mixed to recent. Vintage water likely flows from the adjoining deep karst units where it is then impacted
by recent waters from this karst. Depths to bedrock range fron zero to 75 ft. Following this approach, newly formed or discovered sinkholes will not change an area's probability ranking. As new features are located, or more dye tracing is done, the description of the unit can be further refined.

additionally, one can account for differences between karst areas. The western part of Mower County has karst features which occur at greater depths to bedrock than those in the northeastern or southeastern parts of the county. In terms of the model, these differences can be used to delineate the units, and they can be documented in their descriptions. Since the map and the data coverages will be in ARCVIEW, it will bge easy to keep the information up-to-date.

References

Giammona CP (1973) Flourescent dye determination of groundwater movement and
contamination in permeable rock strata. Int J Speleol 5:201-208

Wopat M (1974) The karst of southeastern Minnesota, Wisconsin. Speleol 13 (1);1-47

DID YOU KNOW…

A cubic mile of fog is made up of less than a gallon of water

"OUT-OF-BOUNDARIES" WATER ECONOMICS

by Lee Trotta

It is not the mission of our groundwater organization or this newsletter to cast dispersions on our profession. This article is definitely "out-of-bounds" in that it takes a negative view. As a certified hydrologist for the past 22 years, however, I feel it my duty to put recent developments in perspective. Much of this discussion comes from fellow hydrologists I've met in the unemployment line, the rest from newspaper accounts or my own experience.

It is quite depressing to see the profession that we know and love, and worked hard at for many years, become what it is today. Most hydrogeologists now work for consulting firms, which currently provide less opportunity for professional growth than ten to fifteen years ago. Consulting is all about business and making money, not about sound solutions based upon facts and sound technical analysis. Data analysis and solutions implemented are based upon watered-down site investigations and incomplete data analysis. Experienced people can find consulting jobs as long as they can bring in new clients (i.e., steal them from previous employers).

Today's youth, choosing a career in hydrology, can only look forward to half a career. Environmental consulting firms have laid off knowledgeable and experienced people because they cost more than recent college grads. The age bias is so strong that as soon as young hydrologists are no longer "wet behind the ears", they may no longer be in the water business. The allowable age-discrimination tactic of "laying off the highest-paid employees" has the effect of throwing specialized scientists into a cutthroat job market where the few job announcements often say "entry level".

Hydrogeology was a booming field with much opportunity when many decided to pursue that course of study at various branches of the UW in the late 1980s. When they graduated in the early 1990s, there were more jobs than people to fill them. At that time, many people entered the field in pursuit of well-paying jobs, not because of love and passion for hydrogeology. After the LUST bust in the mid 1990s (The Michigan LUST fund went belly-up in June 1995) and the current recession, our field lost many jobs. Many people left hydrogeology in order to pursue other fields. This should have reduced the competition for those of us who chose to stay. In fact, the viability of many of today's environmental engineering companies depends on each key change to EPA regulations.

Some in our profession believe that job opportunities will again be plentiful for skilled and experienced people like us. Someday engineering firms, government, industry, and other companies will come to their senses and realize that good technical-based solutions are necessary to solve environmental problems. The watered-down cookbook approaches will then be cast aside, and broad-based professional hydrologists will be essential.

Several trends work against such a joyful prophecy. To list a few: oil speaks louder than water, people are not willing to pay for tap water, and a water scientist gets no respect. What might change in our society to affect these trends? An environment-oriented president might help, but one cannot place the blame for a sluggish economy on one person. "Since Bush assumed office, the U.S. economy has experienced a net loss of 1.2 million jobs, the greatest sustained job loss since the Great Depression" (Michael Rosen, 8-22-2004, Milwaukee Journal Sentinel, p. J-1). Competing Presidential candidates offer nothing in their platforms to address these trends of concern. Concerning oil vs. water, the only company hiring now seems to be Halliburton and the jobs are in Afghanistan or Iraq. Concerning tap water, it's hard to get municipal water improvements approved even though bottled water sales are good. Concerning the lack of respect for water scientists, this is my own conclusion based

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on intense study of thousands of water-related job announcements over the past two years. Respect for the profession we love seems as extinct as the dinosaurs. A hydrologist's resume, that used to draw competition from Fortune 500 companies and government agencies, seems worthless. Water expertise is now shunted aside in favor of skill in building bridges and highways.

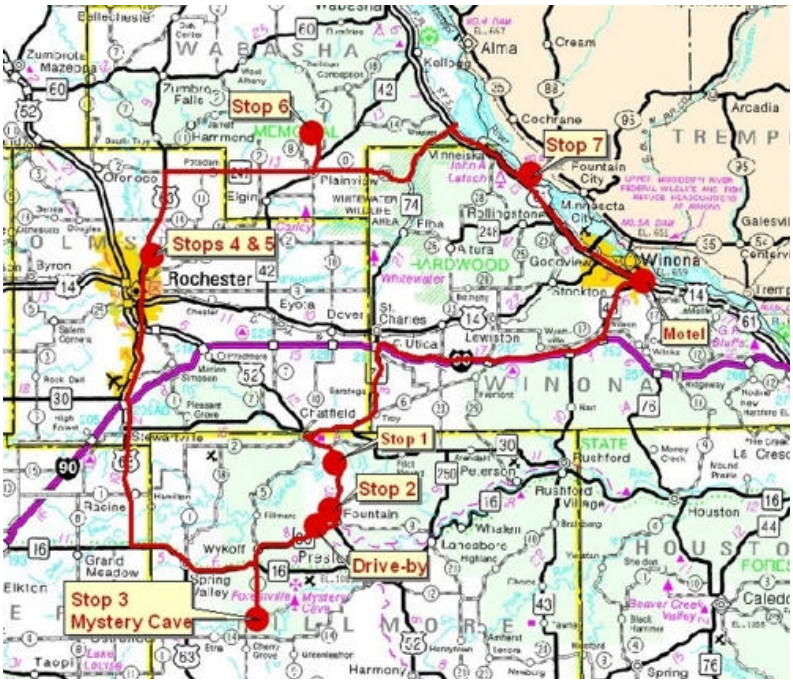
In reality, hydrogeology is on a downward spiral and today's growth industries find our degrees quite useless. The good news is that with the knowledge of man and nature we have gained in our profession, just about any other job is a piece of cake. However, compensation for most available jobs in health care or the service industry is far below what we're used to. Many of these jobs are only offered on a part-time basis. "If one adds the nation's 5.5 million who want to work full-time but can only find part-time jobs, the underemployment rate is a startling 10.5% and still excludes another one million workers who have vanished from the labor market altogether" (Michael Rosen, 8-22-2004, Milwaukee Journal Sentinel, p. J-1). If you have a job in hydrology, hold onto it tightly. Otherwise, look into getting certified as a nurse or accountant. "Both sides of the philosophical divide (Democrats vs Republicans) seem to agree that the rise in long-term unemployment is signaling an economic restructuring, as a result of which many old jobs won't return. What's sorely missing are policies to support workers, who make up America's backbone, during this shift" (Milwaukee Journal Sentinel editorial, 9-29-04, p. 16A).

The following article is excerpted from *"Well" Done Water Protection* by Jennifer Nelson, The Groundwater Foundation.

The Water Systems Council (WSC) is a national non-profit organization dedicated to promoting the wider use of wells. WSC's wellcare program works directly with well owners to protect their drinking water and ensure they have a safe drinking water supply. WSC hosts a hotline to answer questions and address concerns about private wells. Questions can be directed to 888-395-1033 or submitted on-line at www.wellcarehotline.org. WSC reports the greatest number of inquiries deal with water testing and specific questions about drinking water contaminants. Callers include well owners, homebuyers, renters, and real estate professionals.

Fall Field Trip Photos

DAY 1



DAY 2

KNEELING: Dianne and John Erdmann, Curt Wunderlich, Chis Boehm Carlson, Brenda and Joel Halmiak, Jim McKay

SECOND ROW: Eileen Kramer, ?, Becky Caudill, Cathy Undem (and Hunter Undem), Laurel Reeves, Dave Nemetz, Al Scheer, Lee Trotta, Tom Clark

THIRD ROW: Scott Longanecker, ?, Jill Peterman, Emily Bauer, Laura Scheid, Kurt Schroeder, Julett Denton, Justin Blum, Tom Riewe, Jeff Broberg

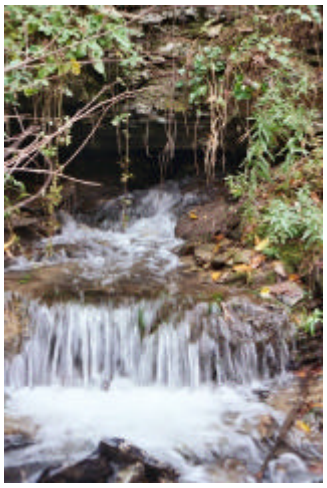
Those in the photo that remain unidentified include: Cynthia Widlund and Laura Scheid.

Dr. Calvin Alexander pointing out solution joint in Prairie du Chien Group to Tom Riewe and Jill Peterman (Stop 1, Day 1)

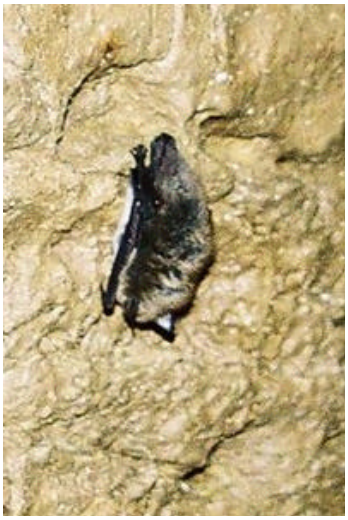
Pool in cave floor Mystery Cave II (Stop 3, Day 1)

Jeff Green (MN DNR) explaining dye trace studies at Main Spring near Fountain, MN (Stop 2, Day 1)

Filled paleofeature and master joints in St. Peter sandstone at Chateau Theater in Rochester (Stop 4, Day 1)



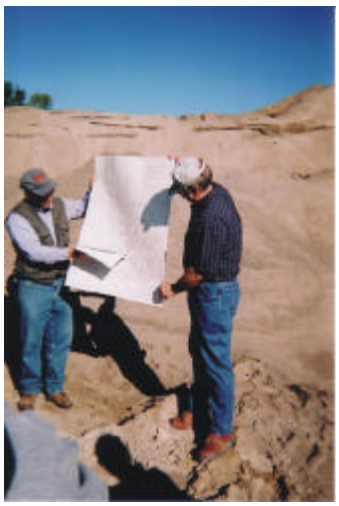
Fountain big spring (Stop 2, Day 1)
Photo by Dave Nemetz



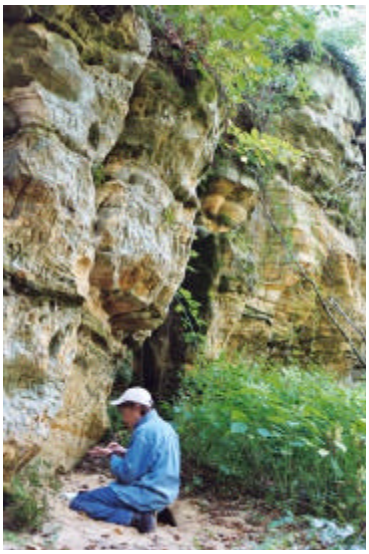
One of the many bats encountered during our tour of Phase II of Mystery Cave (Stop 3, Day 1)

"(Left to Right) Terry Lee Olmsted County) and Perry Jones (USGS-MN) explaining processes controlling nitrate loss in Stonehedge Fen at (Stop 5, Day 1)

Lock 5 (Stop 7, Day 1)
Photo by Dave Nemetz



Holman Quarry, WI: Jim Knox, UW Dept. of Geography, Bruce Brown, WI Geological Survey—discussing extent of WI driftless areas.
(Stop 1, Day 2)
Photo by Dave Nemetz



Eileen Kramer
(Stop 3, Day 2)
Photo by Dave Nemetz

Low-Scheer, McKay, Broberg, Denton, Undem_High-Riewe, Longanecker, Blum, Brown
(Stop 3, Day 2) *Photo by Dave Nemetz*

Texture
(Stop 2, Day 2)
Photo by Dave Nemetz

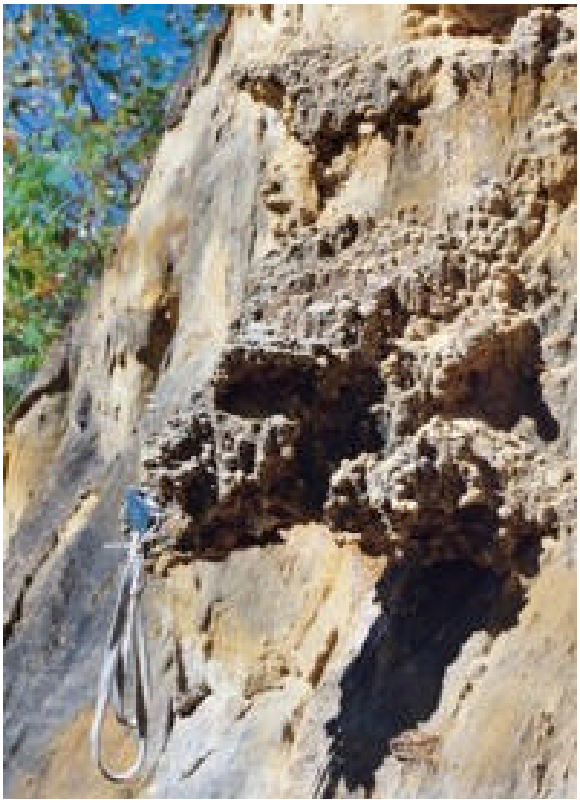
(Stop 2, Day 2)
Photo by Dave Nemetz

High Cliff Park, Galesville, WI, site of type section of Galesville Fm. (Stop 3, Day 2)
Photo by Dave Nemetz

(Stop 3, Day 2)

Silver Mound Quartzite (Stop 4, Day 2)
Photo by Dave Nemetz

View up Mississippi River from Buena Vista Park, Alma, WI (Stop 7, Day 2)



Concretions (Stop 4, Day 2)
Photo by Dave Nemetz

Lee Trotta,
(Stop 7, Day 2)
Photo by Dave Nemetz

"Plan for Well Worries Lake Residents"

from the Milwaukee Journal Sentinel

By Darryl Enriques and Kay Nolan, Milwaukee Journal Sentinel. Reprinted with permission. The article appeared in the Milwaukee Journal Sentinel (Waukesha County Section) on Friday, September 24, 2004.

Some fear damage to Upper Phantom

Town of Mukwonago – As the cool evening air draws a mist off the warm water of Upper Phantom Lake, cottage owners often tell campfire stories of a specter that rises from the foggy darkness.

The spooky legend is now being moved aside by the real yet unproven fear that the idyllic life of Upper Phantom residents could be upset by their neighbors' increasing appetite for fresh water.

The Village of Mukwonago might build a new, high-capacity municipal well at the Phantom Lake YMCA Camp on Upper Phantom, about 600 feet from shore. A growing population and rapid economic development of the village's south side along I-43 carry with them a greater demand for water, a village spokesman said.

Lake residents are concerned about the well drawing from the same aquifer that replenishes the 107-acre lake through underground springs.

David Linton, a resident of Upper Phantom, worries that the well could turn the healthy lake into a stagnant backwater. The springs, rain and snow are its only recharging sources, he said.

Linton and his wife, Sylvia, never figured their lives on Upper Phantom, where they sail, swim, cross-country ski and tell campfire tales, could potentially be upset by that sort of outside intrusion.

The couple has lived on their lake property with 250 feet of frontage for 16 years, rebuilding an old farmhouse on the property.

David Linton's mother, Jean Guthrie, was a swimming instructor at the same YMCA camp where the well might be located, Sylvia Linton said.

At the annual meeting of the Phantom Lake Management District earlier this week, David Linton, the group's chairman, urged town residents who live near Upper and Lower Phantom lakes to keep close tabs on the village's plans.

He urged about 55 residents in attendance to "put a shining light on the process" by attending Village Board meetings and demanding copies of engineering plans and test results.

The district and its 415 members usually deal with setting a lake tax to pay for weed control, water safety education and water quality research.

"We don't have a lot of power," Linton said. "We're just a lake management district that's dealing with bigger agencies."

But Kurt Peot, Mukwonago village engineer, said the village does not need an additional well immediately and probably will not build one for several years.

"All we're trying to do is determine the best site for a well so we have the property if and when we need it," he said.

The proposed well could have a pumping capacity of 30 to 1,000 gallons per minute, but it would be used only as needed, "probably only a few hours a day," said John R. Jansen, an engineering consultant hired by the village.

Jansen said preliminary studies have shown the YMCA site to be the most promising of several possible sites for a well because of its geological structure. Mukwonago is in an area of the state that was once covered with glaciers, which left huge deposits of underground rock, making many local sites unsuitable for a well, he said.

Linton simply wants to be sure the well won't reduce the flow of fresh water to Upper Phantom, which is a "drained," or groundwater lake.

Linton said studies have shown that groundwater flows into Upper Phantom Lake relatively slowly at about 300 gallons per minute, taking up to a year to provide enough water to "flush" the lake with fresh water.

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By contrast, Lower Phantom Lake, connected to Upper Phantom by a channel, is fed by the Mukwonago River, which runs through the lake and constantly flushes the water, preventing stagnation.

“I don’t believe (Upper Phantom) will go dry,” Linton said. “But the worst-case scenario would be if the well would off-set the 300 gallons per minute, so it might take two or three years to flush.”

Bob Biebel, an environmental engineer with the Southeastern Wisconsin Regional Planning Commission, said the well’s potential impact is unknown.

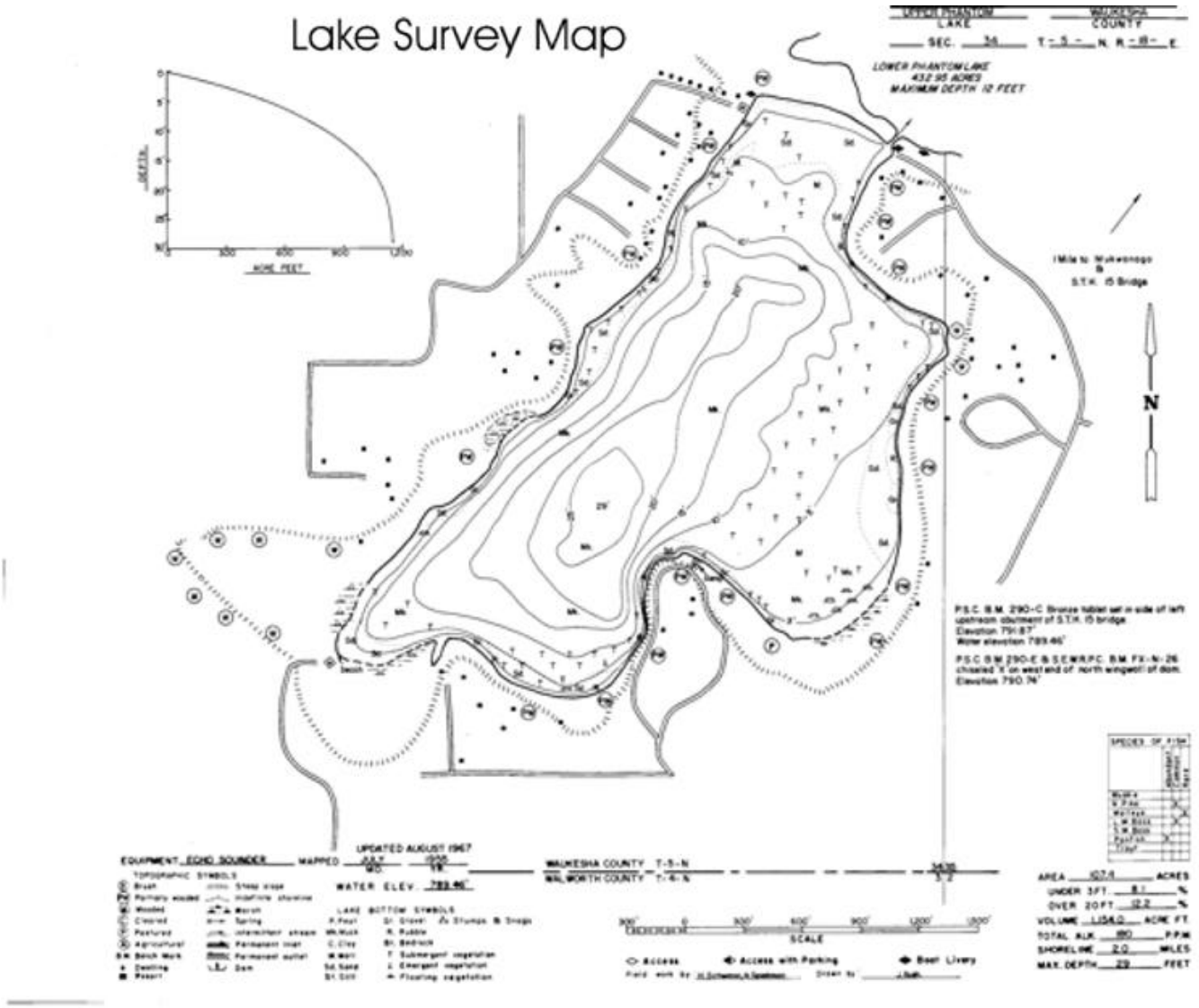
“If you put a well next to a lake or stream, it causes changes,” he said. “The extent of that (in this case) has not been quantified.”

Jansen said a temporary, 8-inch test well will be installed this fall. Nearby groundwater and private wells will be monitored to test the site.

Village officials say they will look for a different site if tests show a significant impact on Upper Phantom Lake.

"The village does not want to harm the lake any more than the people on the lake want it to,” Peot said. “This isn’t the only possible well site.”

Peot said test results will be made public.



WGWA Board Meeting, August 16, 2004 (Conference Call)

Persons present: Boyd Possin, Marilyn Weiss, Tom Riewe, Janis Kesy, Dave Nemetz, Margy Blanchard, Brian Hahn and Becky Caudill

I. Call to order about 7:00 pm.

II. Last meeting minutes (March 29, 2004) - Minutes accepted. Minutes are posted on website.

III. Treasurer's Report – Account balance as of June 30, 2004 was $14,875.42. $3500 spent on scholarships/donations since March 29. Spring Conference costs were balanced by registrations, the conference cost about $174 more than the registrations brought in.

IV. Membership Report – As of August 16, 2004, 270 members. Eight student members, 155 corporate members and 107 individual memberships.

V. Old Business

- Education Committee – Brian Hahn reported that he has gotten some requests for speakers/presentations. He has tried "hooking up" the requestors with people willing to speak. Brian has been helping to coordinate the north central unit meetings. He is coordinating a Sonic drilling demonstration by Boart Longyear at the Marathon County Landfill for September. Also trying to set-up a guest speaker from EarthSoft. They have a software package for data management called EQuIS. Brian has called university professors but not much interest by them or their students in joining WGWA.

- Newsletter – Lee Trotta not available for call. Boyd reported next newsletter to be published soon.

- Groundwater Guardian (GG) – Lee not available for call. Lee told Boyd he is resigning from leading the groundwater guardian group. Due to new job commitment Lee does not have time available to do GG and the newsletter. He will continue to edit the newsletter. Need someone to take over GG. GG was very involved in the 2004 GW festival. Boyd to contact Denise regarding 2005 GW festival.

- WGWA Spring conference – Reviewed May 14, 2004 conference in Wisconsin Dells. Conference went well, broke even on cost. Future conferences - need to continue to get students involved. Start contacting universities in September/October for 2005 conference. Cross fields – pull in other types of interrelated professions not just groundwater. Set up a program/presentation regarding WGWA to take to campuses and other public and private groundwater professionals. Do we need a formal conference committee or ad hoc committee for 2005? Date for 2005 conference. Brian, Dave and Boyd to determine a date for 2005 and make recommendation to board. Education committee will assist in organizing the 2005 conference. Dave will contact AWRA president (Rick Stoll) to determine if they want to combine conferences. Boyd to forward contact information to Dave.

- Fall field trip – Trip scheduled for September 24 -25, 2004. Joint trip with MN. Friday portion of trip on MN side including Mystery Cave. Saturday portion of trip WI side including Galesville. Should be a good trip, many interesting stops. Registration form will be in the newsletter and sent out via email. Registration form should be sent this week. All registration/money will be coordinated through WGWA. Boyd email motel information to board. Cost for bus $400/day, bus hold 40 people. Bus and lunches will be in registration. Motel and other meals will be on your own.

VI. Dave motioned to adjourn meeting at 8:05 p.m., Marilyn seconded motion.

News from the Treasurer

Marilyn M. Weiss

For Transactions Between: 7/1/04 to 9/30/04

Account Name	Withdrawals	Deposits	Balance
Beginning Balance			**$14,875.42**
Membership			
Dues	$0.00	$270.00	**$270.00**
Newsletters			
Production	$400.00	$0.00	
Travel/Conferences	$500.00	$0.00	
Subtotal	**$900.00**	**$0.00**	**($900.00)**
Board Meeting			
Phone Charges	$74.55	$0.00	**($74.55)**
General			
P.O. Box	$24.00	$0.00	
Misc.	$11.38	$0.00	
Subtotal	**$35.38**	**$0.00**	**($35.38)**
Field Trip			
Registrants	$0.00	$2,395.00	**$2,395.00**
TOTALS	**$1,009.93**	**$2,665.00**	**$16,530.49**

The 2004 Board, Committee, and Area Coordinators

President
Boyd Possin
Environmental Compliance Consultants, Inc.
Phone: 920.434.5023 Fax: 920.434.6381
boydpossin@eccinow.com

President-Elect
Dave Nemetz
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dnemetz@madison.liesch.com

Secretary
Janis S. Kesy, P.G., Senior Technical Consultant
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JKesy@foth.com

Treasurer/Membership
Marilyn M. Weiss
Public Service Commission
Phone: 608.266.1613; Fax: 608.266.3957
marilyn.weiss@psc.state.wi.us

Past President (2002-03 President)
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Margaret.C.Blanchard@mwhglobal.com

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rcaudill@naturalrt.com

Committee Chairpersons

Newsletter
Lee Trotta
18905 Wilderness Court, Unit D
Brookfield, WI 53045
Phone: 262.641.9341
lctrotta53072@yahoo.com

Ground Water Sand Model Reservations
Lori Rosemore
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Phone: 715.834.3161; Fax: 715.831.7500
rosemorel@AyresAssociates.com

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Education Committee
Brian Hahn
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bhahn@bhassoc.com

Groundwater Guardian Committee
Vacant

(Continued on page 18)

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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
BT^2
Phone: 608-224-2830 and 608-224-2839
jtweddale@bt2inc.com

North Central Area
(Stevens Point, Wisconsin Rapids, Wausau, Rhinelander, surrounding area)

Tod Roush
Maxim Technologies
Phone: 715.845.4100; Fax: 715.842.0381
troush@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.
___ Check here if you don't have e-mail, and need to receive the *WGWA Newsletter* via regular mail.