

# MINNESOTA GROUND WATER ASSOCIATION

Newsletter Volume 6 Number 3, October 1987

## President's Page

### Nuclear Update

by Linda Lehman

**G**reetings from Burnsville. With the Holiday Season fast approaching, and many things on our minds, the last thing we in Minnesota need is to be pulled back into the nuclear repository siting process. Yet this is a definite possibility.

I recently (mid-September) attended a meeting between U.S. Department of Energy (DOE) and Atomic Energy of Canada, Limited (AECL). During this meeting an announcement was made that unless Congress took some action to stop it, the DOE would start up the second repository siting program as of October 1. The "action" the DOE is talking about could take the form of passage of one of two pending bills which are relevant to the nuclear waste disposal program. Passage of either of these bills could have serious ramifications.

The first bill, H.R. 2967, proposes a moratorium on any site-specific repository work until an independent panel evaluates the DOE program and makes recommendations on how to proceed. It is anticipated an evaluation would delay the progress of the DOE program, including the first round activities in Nevada, Washington and Texas, for at least 18 months.

The second bill, S. 1481, is termed "Son-of-Bribe". This bill involves a substantial departure from the current Nuclear Waste Policy Act. It calls for:

- the selection of either Deaf Smith (Texas), Hanford (Washington), or Yucca Mountain (Nevada) to be

the only repository site characterized (to save money);

- the payment of \$50 million per year as a payoff to the locality hosting a Monitored Retrievable Storage (MRS) facility (a proposed stopping off point for spent fuel from reactors headed eventually to a repository; and
- the option for a special appeals court to review siting decisions under environmental law.

Neither of these two bills address the real problems with the DOE's Nuclear Waste Disposal Program. Furthermore, the Senate bill has potentially disastrous consequences.

The moratorium and panel-review approach is not needed. There is already plenty of information available on the manner in which the DOE is managing their program for nuclear waste disposal. In fact, an independent panel similar to that described by this bill has already been convened. Even though their recommendations are now several years old, many, (if not most) of the findings are still quite valid. Additional study of DOE is not the answer to the problems. Now is the time for decisive action, and not further delays.

A possible outcome of the moratorium approach would be to assign primary responsibility of siting a repository to another federal agency or contractor. One candidate has been mentioned more than casually; the USGS. From my perspective, this causes problems. The USGS has been acting in the capacity of a prime DOE contractor at Yucca Mountain in Nevada for many years. It clearly would be a conflict of interest for the USGS to review and evaluate their own work at Yucca

Mountain. Internal reviews required by the USGS mean that it takes several years before critical data will be published, effectively restricting timely passage of data to state agencies involved.

The "bribery" bill has potentially disastrous consequences. This bill ignores the importance of locating a technically sound repository site, but rather bases the siting on financial incentives. Also, it is not consistent with the National Environmental Policy Act (NEPA) since it does not provide for equal consideration of alternatives required in an Environmental Impact Statement process. Finally, the bill actually encourages the States to band together to overrule any objections from the host State eventually selected. Some of the most obvious problems are:

See page 2 -

## Inside:

Nuclear Update (President's Page)	
Linda Lehman	Cover
Minnesota Water: 1988	2
Calendar	3
National Ground Water Legislation Summary	Holly Stoerker 4
News from other Organizations	5
NWWA National Expo - AGWSE Meeting	Rick Johnston and Lee Trotta 6
Avoiding Environmental Liability in Real Estate Transactions	Greg Fontaine 7
Aquifer Management: the Mount Simon-Hinckley	Ron Nargang 8
Member News	9

- Characterization of only one site at a time. This poorly thought out approach was rejected by the Nuclear Waste Policy Act (NWPA). Unless it is excruciatingly obvious that the site won't contain waste in a technical sense, the first site characterized will be the repository site. It will be very difficult for the site characterization team not to downplay flaws, and attempt to devise engineering solutions to serious problems. It will be virtually impossible to discard the first site characterized, even if it turns out to be technically inferior.
- The review by a special court of appeals seems only to be relevant to site selection procedures. Any problems occurring after Construction Authorization may not be challenged. These two alternatives to the nuclear waste disposal program do not address the real problem. The real problem is not the NWPA, it is the DOE's implementation of that act. From the initiation of the program, the DOE has single-mindedly pursued sites on federal reservations, regardless of their geologic characteristics. The DOE has consistently manipulated the regulations and sacrificed technical objectivity for this objective. The affected States and Tribes have clearly documented these occurrences. The two bills are missing the point, we do not need additional State incentive or built-in delays; we need to get the DOE under control.

The heart of S. 1481 is a financial incentives program. However, it is the DOE, not the States, that needs the incentives. In this case what is needed is the incentive to do things right. The DOE needs controls whereby the spirit of the NWPA can be implemented. In order to gain this control, I propose the following actions:

- Oversight with teeth. To acquire meaningful oversight, the group doing the overseeing must have some method to reward the DOE for good behavior and to punish for bad. This can only be done effectively through control of the "purse strings". By making the appropriations of the DOE funds conditional upon such things as meaningful State participation and review, con-

trol could be effectively placed over the DOE.

- Remove control of State review funds from the DOE. The DOE currently has control over States and Tribes by manipulating their funding. This is no way to watchdog a program. Instead, the States and Tribes should be answerable to an independent oversight group. States should still justify that their expenditures are legitimate, as is now the case with the DOE. Furthermore, States should be encouraged to take on an aggressive peer review of the DOE work. Scientific aspects cannot be resolved in secrecy, but only through open, complete and exhaustive review.
- The DOE should continue to do the work. Although, putting the program elsewhere could possibly solve the problems, realistically, it would take years to gear down the DOE and gear up a new contractor/agency. It also is quite likely the same people (e.g. national labs or DOE contractors) would end up doing the work, since they may be the most qualified.

Obviously, a number of details must be worked out.

- Who does oversight? My opinion is it should not be the Executive Branch. Control should be Legislative to be effective.
- Guidelines for spending and incentive/penalties must be developed.
- Technical conflict resolution procedures must be developed.
- Meaningful participation in the program must be outlined and developed.

Unfortunately, this approach would not resolve all the key issues, such as the MRS and the second repository decision. However, if this approach were adopted, a meaningful, technically-based program would emerge. Given this, many of the other questions could be resolved.

## Minnesota Water: 1988

### Preliminary Meeting, Announcement and Call for Papers

Minnesota Water: 1988 will be held February 15-16, 1988 in St. Paul. It will be a comprehensive conference on statewide water resources issues and is intended to become an annual event. The 1988 conference will address three major aspects of Minnesota water: 1) the status of the state's water resources; 2) recent and ongoing research studies that deal with current water quantity and quality issues; and 3) policy, planning, and legislative issues.

Technical sessions are being organized on topics of current interest (session organizers and the affiliations are listed after each topic):

- Local water planning, H. Quade (Department of Biology, Mankato State University)
- Groundwater pollution, O. Pfankuch (Department of Geology, University of Minnesota)
- Lake level management and related issues, R. Nargang (MN DNR)
- Lake restoration programs, E. Swain (LRC, University of Minnesota)
- Wetlands issues, C. Johnston (Natural Resources Research Institute, Duluth)
- Nonpoint source pollution, T. Scherckenbach (MN PCA)
- Effects of atmospheric pollutants on surface waters, C. Twaroski (MN PCA)
- Water quality and human health, R. Thron (MN Department of Health)

A poster session will feature results of recent and ongoing projects funded by various state and university agencies. Several workshops and demonstrations will be given on recently developed computer programs for water management.

Persons interested in contributing to one of the oral sessions should contact the WRRC or the session organizer listed after the session title by October 15.

The technical program and registration information will be available in November.

# CALENDAR

**October 28 - 30** *32nd Annual Midwest Ground Water Conference*. To be held in Madison, Wisconsin. Contact: Alexander Zaporozec, Wisconsin Geological and Natural History Survey, 3817 Mineral Point Road, Madison, Wisconsin 53705.

**November 1 - 6** *23rd Annual AWWA Conference - Averting Water Crises and Symposium - Water Resources Problems Related to Mining and Energy: Preparing for the Future*. To be held in Salt Lake City, Utah. Contact: Dr. Alten B. Davis, Department of Political Science (1203), Weber State College, Ogden, Utah 84408.

**November 4 - 6** *Petroleum Hydrocarbons and Organic Chemicals in Ground Water*. To be held in Houston, Texas by NWWA.

**November 9 - 12** *NCGA's Mapping and Geographic Information Systems '87*. To be held in San Diego, California by the National Computer Graphics Association. Contact: NCGA, 2722 Merrilee Drive, Suite 200, Fairfax, Virginia 22031.

**November 10 - 11** *Underground Storage Tank Management*. To be held in Tempe, Arizona by NWWA.

**November 10 - 12** *Fundamentals of Ground Water and Well Technology*. To be held in Columbus, Ohio by NWWA.

**November 16** *Overview of Public Domain Computer Models for the Ground Water Industry (one-day seminar)*. To be held in Denver, Colorado by NWWA.

**November 17** *How to Monitor and Sample the Vadose Zone (one-day seminar)*. To be held in Denver, Colorado by NWWA.

**November 18** *Risk Assessment for the Ground Water Scientist (one-day seminar)*. To be held in Denver, Colorado by NWWA.

**November 18 - 19** *RCRA Series - Considerations in RCRA Monitoring and Sampling: An Overview Course for the Newly Experienced Ground Water Scientist*. To be held in Baltimore, Maryland by NWWA.

**November 19** *How to Use Borehole Geophysics in Ground Water Investigations*

*(one-day seminar)*. To be held in Denver, Colorado by NWWA.

**November 19 - 20** *20th Annual Water Resources Conference - Stormwater Management: Policy and Practice*. To be held at the University of Minnesota. Contact: Cheryl Jones, University of Minnesota, 315 Pillsbury Drive, S.E., Minneapolis, Minnesota 55455 or call 1-612-625-9516.

**November 20** *Aquifer Remediation Using In Situ Bioreclamation (one-day seminar)*. To be held in Denver, Colorado by NWWA.

**December 1 - 3** *Principles of Ground Water*. To be held in Tampa, Florida by NWWA.

**December 6 - 11** *AGU Fall Meeting*. To be held in San Francisco. Contact AGU.

**January 26 - 28, 1988** *Ground Water Treatment Technology: part of the Remediation Series Programs*. To be held in Orlando Florida at the Orlando Marriott by NWWA and repeated June 14 - 16, 1988 in Baltimore, MD

**February 8 - 10, 1988** *Fluid flow in fractured media*. International conference in Atlanta sponsored by USGS, the Georgia Water Research Institute, and Georgia State University.

**February 15 - 16, 1988** *Minnesota Water: 1988*. To be held in St. Paul, Minnesota. See Announcement and Call for Papers in this issue.

**February 16 - 18, 1988** *Ground Water Geochemistry Conference*. To be held in Denver, Colorado by NWWA.

**March 8 - 10, 1988** *Corrective Action for Containing and Controlling Ground Water Contamination*. To be held in Atlanta, Georgia by NWWA.

**March 20 - 23, 1988** *AAPG Annual Convention*. Contact AAPG Convention Department, P.O. Box 979 Tulsa OK, 74101-0979.

**March 21 - 23, 1988** *Agricultural Impacts on Ground Water*. To be held in Des Moines, Iowa by NWWA.

**May 23 - 26, 1988** *Second National Outdoor Action Conference on Aquifer Restoration, Ground Water Monitoring and Geophysical Methods*. To be held in Las Vegas, Nevada by NWWA.

**June 21 - 24, 1988** *Canadian/American Conference on Hydrogeology: Fluid Flow, Heat Transfer and Mass Transport in Fractured Rocks*. To be held in Banff, Alberta, Canada, cosponsored by NWWA's AGWSE.

**August 28 - 31, 1988** *Symposium on Water-Use Data for Water Resources Management*. To be held in Tucson, Arizona by AWWA.

*For information about meetings and seminars to be held by the NWWA, contact NWWA at 6375 Riverside Drive, Dublin, Ohio 43017 (614) 761-1711, Telex 241302.*

---

## Newsletter Design

The new format of our newsletter is due to the installation of the Xerox Desktop Publishing System VENTURA at DNR and to the fact that Jeanette Leete (who produces the newsletter on her LaserJet) attended a newsletter design short course. Our newsletter received a professional critique and we were able to implement some of the suggestions for improvement due to the new software...

The newsletter is always looking for articles. If you have suggestions for any, or if you are working on something you'd like to share with our members, please submit your ideas to Lee Trota (our Editor) at USGS, 702 Post Office Building, St. Paul, Minnesota, 55101.

---

# National Ground Water Legislation Summary

by Holly Stoerker (Upper Mississippi River Basin Association)

There are at least nine ground water bills that have been introduced in the 100th Congress since it convened in January 1987. The number of bills and the high degree of interest in groundwater legislation by key committee leaders such as Senators Durenberger, Moynihan, and Burdick indicates that ground water may indeed be the water resource issue of the 100th Congress. Congressional interest seems to reflect the growing consensus that numerous federal and state protection programs and research efforts are uncoordinated and inadequate. The Administration has even changed its position. In May, Environmental Protection Agency (EPA) Administrator Lee Thomas acknowledged that he had changed his mind regarding the need for federal ground water protection legislation. He now believes federal legislation is needed because a disjointed approach may lead to heavier federal involvement than is appropriate. He also concedes that federal legislation is necessary to clarify respective roles of state and federal government and achieve consistency and coordination among federal agencies.

Though the need for "comprehensive" ground water legislation is often discussed, there appear to be two major components: research and protection strategies. There have been four research bills introduced. Two deal with U.S. Geological Survey (USGS) responsibilities (H.R. 791 and S. 513) and one deals with EPA responsibilities (H.R. 2253). The House committees with jurisdiction over these bills have chosen to combine the USGS and EPA bills into a single ground water research bill. The fourth bill (S. 1105) was originally drafted as a comprehensive research bill addressing both EPA and USGS as well as federal research coordination in general.

The other major groundwater issue is that of protection strategies. To date, S. 20 and its House companion H.R. 963 are the only bills which propose that management plans and protection programs be

required of the states under EPA's leadership.

There are a few other miscellaneous ground water bills of note. S. 1419 and H.R. 2463 single out pesticide contamination as an issue and provide for both research and protection strategies for that problem. H.R. 2320 employs a "carrot and stick" approach to encourage the reclamation states in particular to better protect and manage their ground water resources.

In short, there appears to be significant Congressional interest in developing truly comprehensive ground water legislation. Such legislation will likely be a composite of proposals embodied in various pending bills. However, if debate over key policy issues and jurisdictional struggles become too contentious, Congress may find it necessary to focus on more narrowly defined aspects in separate bills.

## **S. 20 Groundwater Protection Act of 1987**

**Summary:** Requires EPA to establish groundwater quality for 100 contaminants within 2 and 1/2 years. States would then be required to adopt standards for those contaminants based on EPA criteria. States are also required to conduct groundwater assessments, develop a groundwater management strategy, conduct monitoring, and establish protection programs to control contamination sources and assure compliance with the standards established by the state. The state protection programs are to address solid waste disposal, hazardous waste disposal, pesticide use, and underground injection. Matching grants are authorized to assist states in their responsibilities. (H.R. 963 is identical).

**Introduction Date:** January 6, 1987  
**Sponsors:** Moynihan (NY), Burdick (ND), Mitchell (ME), Baucus (MT) and Lautenberg (NJ)  
**Committees:** Environment and Public Works

## **S. 1105 Groundwater Research Act**

**Summary:** Title I - Creates a comprehensive groundwater research and demonstration program at EPA with emphasis on pollution control technologies and health effects of contaminants. Dozens of

specific research topics are authorized. EPA is also to conduct a national assessment of certain sources of groundwater pollution and develop criteria documents for individual contaminants. In addition, EPA is to make grants to establish 4 groundwater research institutes.

**Title II -** Continues and expands USGS groundwater research efforts. USGS is to perform a national groundwater inventory including a review of the adequacy of existing data collection and monitoring programs.

**Title III -** Authorizes and expands the research program of the Agricultural Research Service. Research is to be conducted on pesticide and nutrients application, irrigation practices, and operation of feedlots.

**Title IV -** General provisions include authority for 8 special studies, establishment of a national groundwater information clearinghouse, and provisions for coordinating the research of all federal agencies.

**Introduction Date:** April 28, 1987  
**Sponsors:** Burdick (ND) and 8 others from the Environmental and Public Works Committee  
**Committees:** Environment and Public Works

## **S. 1419 - Groundwater Safety Act**

**Summary:** Amends FIFRA by adding two sections to prevent contamination of ground water from pesticides. EPA is to set health-based standards for pesticides that can leach into ground water as a result of agricultural practices. Pesticide manufacturers must monitor use. Regulatory provisions include authority for EPA to restrict uses and practices or take site-specific action with states to prohibit certain pesticides' use in contaminated areas.

States are to establish programs to prevent surface and groundwater contamination by pesticides in conjunction with the new nonpoint programs under the Clean Water Act. Pesticides posing contamination threat cannot be used in states without a program approved by EPA.

**Introduction Date:** June 24, 1987

**Sponsors:** Durenberger (MN) and 13 others

**Committees:** Agriculture, Nutrition, and Forestry; Environment and Public Works

#### **H.R. 791 - National Groundwater Contamination Information Act**

**Summary:** As originally introduced, USGS was to prepare a groundwater report and conduct an assessment program of groundwater quality trends. In addition, USGS was to establish a national ground-water information clearing house. When ultimately reported from the Interior and Insular Affairs Committee, it was revised to focus less on assessments of actual groundwater quality and more on assessments of the sufficiency, availability, and utility of existing data.

Three of the four committees with sequential referral of H.R. 791 (the Science, Energy, and Public Works Committees) all chose to combine H.R. 791 and H. R. 2253. The new substitute versions all expand significantly on the original scope of the bill. The new versions are intended to create a comprehensive groundwater research program with emphasis on coordination between USGS, EPA, and other federal agencies. The substitutes create an interagency groundwater research committee consisting of USGS, EPA, Department of Agriculture, and Department of Health and Human Services. USGS would be the lead federal agency for the purpose of conducting a national groundwater information assessment program.

A groundwater information clearinghouse would also be established in USGS. EPA would be the lead agency for research activities that support its regulatory functions. EPA would be required to set up a national research, development, and demonstration program and a risk assessment program. Both the EPA and USGS would be directed to provide technical assistance and training for state and local personnel. The Energy and Public Works versions also include a radium removal grant program. Unlike the other versions, the Public Works bill includes a section authorizing the Secretary of the Army to review water resource projects with regard to their impact on ground water. (S. 513 is nearly identical).

**Introduction Date:** January 28, 1987

**Sponsors:** Originally introduced by Gejdenson (CT) and 42 other. Since then, 28 additional sponsors have signed on.

**Committees:** Original referral - Interior and Insular Affairs. Later sequential referral until September 30 - Agriculture; Energy and Commerce; Public Works and Transportation; Science, Space, and Technology.

#### **H.R. 2253 - Groundwater Research, Development, and Demonstration Act.**

**Summary:** Establishes a comprehensive program of groundwater research and demonstration at EPA with emphasis on control and mitigation technologies and health effects. In addition EPA is authorized to provide grants to establish 3 groundwater research institutes and is directed to establish a national groundwater information clearinghouse. During hearings and committee markups, H.R. 2253 was combined with H.R. 791 to produce a comprehensive groundwater research bill.

**Introduction Date:** April 30, 1987  
**Sponsors:** Scheuer (NY) and 7 others  
**Committees:** Energy and Commerce; Science, Space, and Technology

#### **H.R. 2320 - Reclamation States Groundwater Protection and Management Act**

**Summary:** The Secretary of Interior is to identify states with significant groundwater overdraft, contamination, or pollution problems. The Secretary must then assess the adequacy of protection and management programs in those states. Problem states would then have three years to develop adequate programs. Thereafter, the Secretary would be prohibited from spending or obligating funds for the construction of any reclamation project or executing any reclamation water service contract in any state without an approved groundwater management program.

**Introduction Date:** May 7, 1987  
**Sponsors:** Miller (CA) and 19 others  
**Committee:** Interior and Insular Affairs

#### **H.R. 2463 - Federal Insecticide, Fungicide, and Rodenticide Act Amendments**

**Summary:** Section 814 of this ten title bill deals with groundwater contamination by pesticides. It is similar but not identical to S. 1419. EPA is required to determine the groundwater leach potential of registered pesticides. EPA may require manufac-

turers to monitor groundwater where the pesticide is used. If EPA finds that the groundwater residue guidance levels it established might be exceeded in drinking water wells, it can require changes in pesticide use. If contamination is found but pesticide has been properly used, the State is required to take action. Section 814 does not contain provisions similar to S. 1419 requiring states to establish programs to prevent pesticide contamination.

**Introduction Date:** May 19, 1987  
**Sponsors:** de La Garza (TX) and 11 others  
**Committee:** Agriculture

## **Minnesota Society of Optical Microscopists**

**Monday Night Dinner Meetings:**

November 9th: "The use of Optical Microscopy in Cloning Studies" Dr. Robert McKinnel, Genetics and Cell Biology, University of Minnesota

February 8th, 1988: "Photometric Measurements" Jack Isaacson, Nikon Incorporated.

March 14th, 1988: "Microscopical Tricks of the Trade" Poster Talks by Members.

April 11th, 1988: "Recent advances in Microscopy" Walter McCrone, McCrone Institute.

**Symposium:**

April 25th, 1988: "Symposium: Quantitative Microscopy"

**Short Course:**

November 20th and 21st: "Advanced Polarized Light Microscopy" and "Introduction to Applied Light Microscopy"

Contact Mark Cavaleri at (612) 696-6448

## **Geological Society of Minnesota**

**Monday Evening Meetings:**

February 8th, 1988: "Minnesota: The Last 2 Million Years" Howard Hobbs, Minnesota Geological Survey

February 22nd, 1988: "Twin Cities Glacial Geology" Gary Meyer, Minnesota Geological Survey

April 4th, 1988: "Water" E. Calvin Alexander, U of M, Geology

Contact Robert Handshin at (612) 774-1431

# NWWA NATIONAL EXPO - AGWSE MEETING

by Rick Johnston and Lee Trotta

The NWWA brought the heavy equipment and AGWSE brought the big guns to town September 14 - 16, and by all reports both were a big hit. It's not often you see drilling rigs as shiny as those exhibited or with all their parts. A number of MGWA members sat in on some of the 30 workshops at the Minneapolis Convention Center and reported them to be very interesting and practical. There was no shortage of exhibitors either, about 175 were present with more pumps, tanks, pipes and black boxes than you could shake a (yard) stick at. I never could find where they were giving those out!

The Association of Ground Water Scientists and Engineers sponsored a two-day education program on contaminant hydrogeology. The morning session on Tuesday was attended by about 75 and featured Senator Dave Durenberger on a video presentation prepared especially for the program. Senator Durenberger feels there are four major ground water issues which need to be addressed at the federal level. These are: wellhead protection, pesticide legislation, a ground water research bill, and a comprehensive ground water bill. There is much work to be done in ground water protection and,

as usual, it appears Minnesota will be playing a significant role in program development. Our thanks to the Senator for taking time to prepare the tape and to Bonnie McCarvel of his Minneapolis office for coordinating the effort.

MGWA played a significant part in preparing the morning program and arranging for the Senator and other local participants who included Mike Kanner (MPCA), Kelton Barr (Biotrol), and Pat Leonard-Mayer (Harstad and Rainbow).

The panel discussion on Certification and Registration was interesting and could have gone on for hours. At the end of the discussion Kelton took a "straw poll" to get the audience's opinion on the issue. About 90% are still undecided. Our thanks to all of them and also to Brian Mullins (Wickwire, Gavin and Bibbs; Madison) who was present at MGWA invitation and gave an excellent presentation on alternatives to liability insurance.

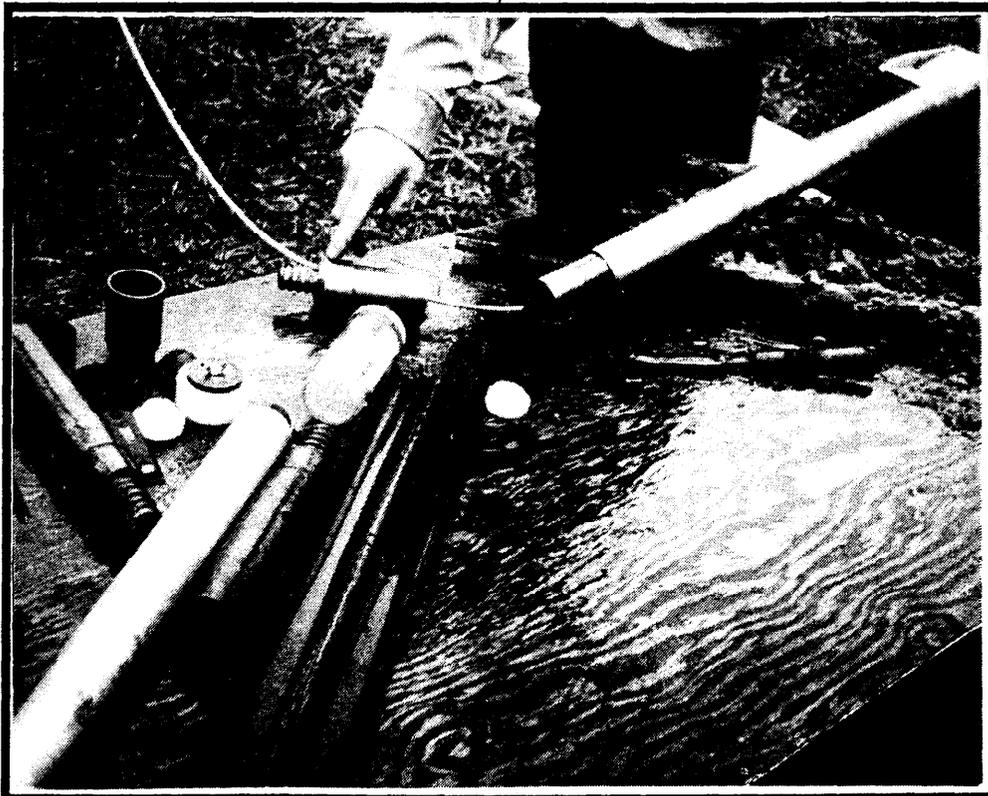
AGWSE brought in the heavy hitters in the field of contaminant hydrology to kick-off each of the three other sessions. These included John Cherry (Waterloo), the keynote speaker. Dr. Cherry gave us lots to think about with respect to the hydrology of low permeability soils, particularly clays. Other key speakers included Gary

Olhoeft (USGS), *Geophysical Techniques to Detect Ground Water Contaminants*; Paul Roberts (Stanford), *Identifying Process Mechanisms Governing Contaminant Transport: "Is the Medium the Message?"*; and Leonard Konikow (USGS), *Overview of Physical Processes Controlling Solute Transport*.

The AGWSE also had a general membership meeting and a poster session. Significant among meeting items was a special award given to Fletcher Driscoll, whom most of us know locally, in recognition of his authorship of the new UOP-Johnson book *Groundwater and Wells*. Monumental is the word that comes to mind. Congratulations to Fletcher.

AGWSE also announced that Tom Prickett is potentially available to present the Darcy Lecture this year. MGWA has already extended an invitation to him through AGWSE in cooperation with the Geology Department at the 'U'.

The sessions were followed Thursday morning by a comprehensive field demonstration of drilling and soil sampling equipment and methods for ground-water monitoring at UOP-Johnson in New Brighton. In spite of a drizzling rain, many turned out to compare the various methods exhibited and consider new ways to get the job done. Of the four drilling rigs, the air rotary/casing hammer rig shown by Boundary Waters did the most to deafen our eardrums and roll down our socks with its 250 pound drive hammer. And to think they have a 1200 pound hammer in Duluth! The six types of soil sampling methods (see split spoon photo) and three pieces of geophysical equipment exhibited were also impressive but in a more subtle way. I think the NWWA learned that they don't have to worry about weather affecting the turnout in Minnesota. The group, however, may have set a new record in coffee consumed! Thanks to Dave Kill (UOP-Johnson) for coordinating the program and to all of those who participated and especially to the following who supplied and demonstrated equipment: Braun Engineering, Geotechnical Engineering, Bergerson Caswell, Boundary Waters, Minnesota Downhole, and Bruce Liesch Associates. All in all it was an interesting and informative three or four days. We hope everyone had a good time and benefited from the program.



# Avoiding Environmental Liability in Real Estate Transactions

by Greg Fontaine

*Copyright Dorsey & Whitney. Reprinted with permission from the Dorsey Environmental Report published by the Environmental and Regulatory Affairs Department of Dorsey & Whitney.*

Virtually every type of business is affected by the broad reach of the present federal and state environmental laws and regulations. Potential environmental liability associated with real property transactions, although often not obvious, can result in substantial costs, delays in development, decreased property values, and claims from adjacent land owners, lessees or lessors, and on-site workers. This article will briefly review some of the concerns that buyers, sellers and lenders involved in industrial and commercial real estate transactions should consider to avoid unanticipated environmental liabilities that can substantially affect, or even destroy, the profitability of those transactions.

There are numerous federal, state and local sources of environmental liability. For example, the federal Superfund law, and its Minnesota counterpart, provide government with funding and authority to clean up sites contaminated with hazardous waste. The Superfund acts also permit environmental agencies to require responsible parties to clean up contaminated areas and/or to repay the government for clean-up costs it incurs. Courts and environmental agencies have expanded the categories of responsible parties to include not only parties who are directly responsible for contaminating property, but also innocent owners who have acquired property contaminated in the past, lessees, lessors, corporate officers and directors, and even lenders who have foreclosed on contaminated property.

The trend toward increasing environmental liability associated with hazardous materials show little sign of slowing. The recent reauthorization of the federal Superfund has infused substantial new fund-

ing and authority in the United States Environmental Protection Agency. Likewise, the Minnesota Pollution Control Agency is seeking increased funding for the Minnesota Superfund program.

There is activity in other areas as well. Some states have enacted so-called "Superlien" legislation under which a state may place a lien against property it cleans up and that lien will have priority over any other secured interests held on the property. In other states, legislation has been adopted to require owners to certify that their property is clean of hazardous waste prior to transferring the property. Expanding state and federal regulation of the use, storage, treatment, and disposal of hazardous substances -- along with prospects for increased common law liability for persons and entities who handle hazardous waste in any manner -- promise that the future holds substantial risks of environmental liability.

Recognizing these trends, buyers, sellers, and lenders with increasing frequency are seeking to conduct pre-acquisition investigations and negotiate agreements which will provide protection against environmental liability. At the very least, parties involved in the purchase and sale of commercial or industrial property want to identify potential problems so that they can define and limit their risks. Unanticipated entanglement with property requiring cleanup is a losing proposition for everyone involved. At a minimum, a party may lose the return on its investment.

Often cleanup costs can exceed the value of the property, and sometimes those costs can even exceed the revenue-generating abilities of the parties involved. Environmental issues should be focused on early in a potential transaction to ensure that problems are discovered and dealt with in a satisfactory fashion. Among the questions that buyers, sellers and lenders should ask themselves or their representatives before they enter into a purchase or sale transaction are the following:

- Should a site investigation or assessment be conducted?

- If a site investigation will be done: How extensive will it be? How much will it cost? Who will pay for it? Who will do it? By when must it be completed? How will site access be handled? To whom and how will the information generated be disseminated?
- How much information should be disclosed with regard to past and present site conditions and activities on the site?
- What type of warranties, if any, should accompany disclosures regarding site activity and conditions?
- If a contamination problem is discovered prior to closing a purchase agreement: Will the transaction be cancelled? Will one party be responsible for cleanup or will the parties allocate responsibility in some fashion? Can the transaction be restructured to divide the parcel to eliminate the contaminated area? Who is responsible for dealing with any applicable administrative agencies? Can the relevant environmental agencies provide any assurances at that time regarding the need for, and extent of, cleanup?
- What will be the timing with respect to any investigation and termination rights?
- Will warranties and indemnifications survive closing of the purchase agreement?
- Will the purchase agreement permit modification of warranties, investigation and cleanup procedures, and other provision if environmental problems are discovered prior to closing? Are there any relevant insurance issues?
- Have the parties complied with all relevant federal, state and local environmental laws and regulations? Have the parties obtained all necessary permits? Are the parties in

compliance with all necessary permits?

- Are there any pending or threatened legal proceedings with respect to the property in question?
- How will any hazardous substances on the property be disposed of?

How can a lender protect its security interest without incurring environmental liability? Should the transaction be structured as an asset sale or a stock sale? In what collateral will the lender take a security interest? Under what circumstances will a lender be able to utilize its foreclosure rights?

All parties will benefit when these environmental issues are considered and resolved relatively early in any real estate transaction. An adequate site investigation can help quantify the probability of a pollution problem, and if one exists, its likely extent and cleanup costs. This information can be useful in structuring and negotiating any acquisition. For example, contaminated parcels may be carved out of the deal or the parties may establish purchase money holdbacks or cost sharing agreements for investigation and cleanup. Warranty and indemnification provisions also may be included. Finally, the transactional documents can be structured to provide for flexibility to keep the deal moving forward even if a pollution problem is discovered.

By planning ahead, buyers and lenders can take steps to minimize their risks of unanticipated liability for environmental problems which they did not create. Sellers can act to allocate risks and expenses and to protect against buyers' or lenders' future requests for cleanup for which they are responsible. In short, if the parties are able to identify and quantify their environmental liabilities or risks, the risks can be allocated in much the same manner that other business liabilities or risks are treated by sophisticated buyers, sellers and lenders. Finally, those liability and risk allocations can -- and should -- be properly included within the written agreements to ensure that everyone's interests are properly protected.

## AQUIFER MANAGEMENT

*In order to keep our membership informed, this newsletter periodically describes issues, strategies, and needs of State and Federal agencies at work in Minnesota. The following aquifer management issues have varied little over the last twenty years but have become important over wider and differing areas. Adequate supplies of high-quality water are still being sought. Ground water currently generates about 12 times the economic activity that surface water does, because it has proved more reliable. The ground-water supply is finite and increasingly at risk from a proliferation of contaminants. Water conservation can stabilize demand but the replenishment of ground water via recharge varies statewide and is poorly understood.*

*The general strategies are to study and quantify the supply and quality of major aquifers statewide. Monitoring is needed to assess impacts of current, and future uses in order to protect each aquifer from overdevelopment or contamination. Protection must be implemented through regulatory programs based on knowledge of the condition of the resource and effective planning and remediation measures.*

Six bedrock aquifers of regional significance make up the sedimentary sequence beneath the Twin Cities area. The oldest and bottom-most of these is the Mount Simon-Hinckley, the second largest source of ground water in the area. The importance of the Mount Simon-Hinckley Aquifer must be stressed. As the lowest aquifer in the system it is the least susceptible to contamination, is the most expensive to pump from, has the least recharge, and should potentially be preserved as a source of future drinking water. Extensive pumping from the municipal, commercial and industrial wells in the center of the basin had lowered water levels in Mount Simon-Hinckley wells by as much as 200 feet by 1980, and declines of as much as another 200 feet are predicted for this decade due to increased population and development. This leaves only 300 feet of available drawdown, compared to 700 feet before development.

Use of the Mount Simon-Hinckley Aquifer is increasing because drilling of

deeper wells is a frequently chosen solution to water supply problems. The DNR (Minnesota Department of Natural Resources) is faced with ground water management decisions which may have extensive future implications: Should a contaminated water supply well be replaced with a Mount Simon-Hinckley well while the treated water from the contaminated well is "wasted" during cleanup? Should Mt. Simon-Hinckley wells under contaminated aquifers be pumped when the integrity of the well's casing and grout seal and of the confining bed or beds are not known? Should Mount Simon-Hinckley wells be drilled "just in case", i.e. when a community perceives a political need to avoid sprinkling and car-washing bans at all costs? Should withdrawals from the Mount Simon-Hinckley Aquifer be limited and allocated among users?

Without accurate knowledge of the response of this aquifer system to pumpage, recharge and climatic trends, the DNR is hindered in the formulation of policies to deal with these current issues. The Division of Waters is therefore seeking support for a comprehensive aquifer evaluation system to increase the understanding of the hydrologic effects of pumping and to help the state and the major water users plan the future management of the Twin Cities Artesian Basin. Data gathered will be used to further calibrate and verify the USGS Twin Cities Model.

This system would include observation wells. Because of the high cost of drilling wells into the Mount Simon-Hinckley Aquifer, all possibilities will be investigated to acquire permission to monitor wells which might otherwise be abandoned (and thus assume cost of future abandonment). The Department is asking for the help of MGWA members who in their work might find out about such potential monitoring wells. Contacts at DNR are Brian Rongitsch (296-0434) and Dr. Jeanette Leete (296-0433).

- Ron Nargang, Director, Division of Waters, Minnesota Department of Natural Resources

## MEMBER NEWS

*Editor's Note: This section is dependent upon information from you. If there are changes in your office - let us know!*

Pat Bloomgren left the Division of Waters at DNR to take over the Department of Health's wellhead protection program.

Rob Brown left the St. Paul USGS for the Michigan District (Lansing)

Bob Miller left the St. Paul USGS for Wehring Engineering in New York State.

Rick Lindgren has joined the St. Paul USGS office from the South Dakota District.

Al MacKenzie will join the St. Paul USGS office in January. He'll be coming in from the Wisconsin District.

### ADVERTISERS PLEASE NOTE:

Your fees for the 1988 issues

are now due.

Rates are \$40/yr for standard 2X3" size.



### GEOTECHNICAL ENGINEERING CORPORATION



- Consulting Engineers
- Soil Borings
- Soil Testing
- Monitoring Wells

1925 Oakcrest Ave.  
Roseville, MN 55113  
(612) 636-7744

7373 147th St. West  
Apple Valley, MN 55124  
(612) 431-5266



Minnesota: Minneapolis • St. Cloud • Hibbing  
Rochester • St. Paul  
North Dakota: Bismarck • Williston Montana: Billings  
(Minneapolis Phone (612) 941-5600)

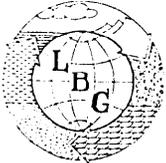
Geotechnical, Materials, & Environmental Testing and Consultation:  
Test Borings, Foundation Engineering, Non-Destructive Testing,  
Physical & Chemical Tests of Soils, Water, Steel, Concrete,  
Bituminous, Hazardous Wastes

## Groundwater Monitoring Products by Johnson® screens

P.O. Box 64118  
St. Paul, Minnesota 55164  
Telephone 612-636-3900

DAVID L. KILL, P.E.

**LEGGETTE,  
BRASHEARS  
& GRAHAM, INC.**



consulting ground-water geologists

— Contamination Studies — Field Investigations — Well Logging —  
— Water Supply — Computer Modeling — Dewatering —

1210 W. County Rd. E  
St. Paul, MN 55112  
(612) 490-1405

Albuquerque, New Mexico (505) 247-2000    Tampa, Florida (813) 879-8177    Wilton, Connecticut (203) 762-1207

**Stevens**

Specializing in Monitoring  
Wells & Test Drilling  
(612) 479-2591  
6240 Highway 12 Maple Plain, MN  
State License #27194

**HARSTAD & RAINBOW**  
ATTORNEYS

Environmental Litigation  
Consulting  
and Audits

Douglas R. Rainbow  
Nicholas N. Nierengarten  
Patricia J. Leonard-Mayer

1036 Norwest Midland Building    Minneapolis, Minnesota 55401  
(612) 338-7811

Since 1958

**Bergerson-Caswell Inc.**

- Ground water monitoring well drillers
- Air & mud rotary wells
- Cable tool wells
- Well abandonment
- Stabilization & zone pumping tests
- H.E.R.D. & high velocity well development
- Video well logging

**Wells, Pumps, Service and Repairs 24 Hour Answering Service**

John H. Gilbertson, P.E.  
Registered  
Monitoring Well Engineer

MEMBER  
GROUND WATER INSTITUTE

5115 Industrial Street  
Maple Plain, MN 55359  
(612) 479-3121

**GROUNDWATER SAMPLING  
AND ANALYSES**

- Sampling
- Sampler Rental
- Complete Chemical Analyses  
Including Volatile Organics  
and Toxic Heavy Metals



**MINNESOTA VALLEY  
TESTING LABORATORIES, INC.**  
326 Center St.    New Ulm, MN 56073

In Minnesota Call Toll Free  
**1-800-782-3557**  
Outstate Call Collect  
**507-354-8517**



**When the  
subject is  
environmental  
protection,  
Bay West  
has a lot to  
offer:**

**CONSULTING AND TRAINING SERVICES**  
Remedial Investigation/Feasibility Studies  
Groundwater Studies/Computer Modeling  
Risk Assessment  
Industrial Hygiene  
Worker Right to Know Training  
Regulatory Compliance

**HAZARDOUS WASTE SERVICES**  
Emergency Response  
Hazardous Waste Site Cleanup  
Sludge Removal/Tank Cleaning  
Facilities Decontamination  
Preparation of Wastes for Transportation and Disposal  
On-Site Treatment Equipment  
Spill Control Supplies

**GROUNDWATER SERVICES**  
Geotechnical Studies  
Monitoring Well Installation  
Groundwater Recovery and Treatment  
On-Site Treatment Equipment

**TANK MANAGEMENT SERVICES**  
Development of Tank Management Systems  
Certified Petro-Tite® Precision Testing  
Soil Borings and Monitoring Wells  
Electronic Leak Detections Systems

Call or write today for a  
profile of our services



**Bay West inc.**  
Environmental Services  
800 N. Grotto Street • St. Paul, MN. 55104  
Phone (612) 488-1008

**WATER RESOURCES & ENVIRONMENTAL CONSULTANTS**

HAZARDOUS WASTE SITE INVESTIGATIONS      COMPUTER MODELING  
 REGULATORY COMPLIANCE ASSISTANCE      MINELAND RECLAMATION  
 REMEDIAL MEASURES ENGINEERING      HYDROGEOLOGICAL EVALUATIONS



**Barr**  
 ENGINEERING CO.

BARR ENGINEERING CO. CONSULTING ENGINEERS  
 7802 GLENROY ROAD MINNEAPOLIS, MN 55435 (612) 530-0555



**Delta Environmental Consultants, Inc.**  
 Hydrogeologists, Engineers and Scientists

<b>St. Paul</b> 612-636-2427	<b>Tampa</b> 813-874-8161
<b>Fort Collins</b> 303-493-0800	<b>Sacramento</b> 916-923-1598
<b>Phoenix</b> 602-866-3469	<b>Charlotte</b> 704-523-1700



**twin city testing corporation**

Consulting Engineers and Chemists  
 662 Cromwell Avenue, St. Paul, MN 55114  
 PHONE 645-3601

Additional offices in: Mankato,  
 Rochester and St. Cloud



Professional Analytical Chemistry & Engineering

1710 Douglas Drive North  
 Minneapolis, MN 55422  
 Phone: (612) 544-5543

Bench and Pilot Scale Treatment  
 Laboratory Analysis  
 Groundwater Monitoring  
 Environmental Audits  
 Hazardous Waste Management  
 Industrial Hygiene

WELL DRILLING FOR FOUR GENERATIONS

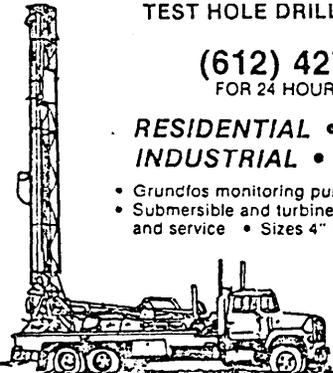
**E. H. Renner & Sons**  
 INCORPORATED

SPECIALIZING IN:  
 WELL ABANDONMENT  
 MONITORING WELLS  
 TEST HOLE DRILLING

(612) 427-6100  
 FOR 24 HOUR SERVICE

**RESIDENTIAL • MUNICIPAL  
 INDUSTRIAL • IRRIGATION**

- Grundfos monitoring pump dealer
- Submersible and turbine pump sales and service • Sizes 4" through 30"



Member of  
 NWWA/MWWA

15688 Jarvis St.  
 Elk River, MN.  
 55330

**Stevens**  
 WELL DRILLING CO., INC.

(612) 479-2591  
 6240 Highway 12 Maple Plain, MN  
 State License #27194



612-559-1423

BRUCE A. LIESCH ASSOCIATES, INC.

- CONSULTING HYDROLOGISTS -
- PROFESSIONAL GEOLOGISTS -
- ENVIRONMENTAL SCIENTISTS -

EXPERTS IN GROUND WATER AND  
 SURFACE WATER HYDROLOGY

3131 Fernbrook Lane ■ Minneapolis, MN 55441

Annual Membership Dues: \_\_\_\_\_ Individual-\$10/Year, \_\_\_\_\_ Student-\$5/Year  
Make checks payable to: Minnesota Ground Water Association  
P.O. Box 3362, St. Paul, MN 55165

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Telephone Number: ( \_\_\_\_\_ ) \_\_\_\_\_

**1988 Board of Directors**  
**Past-President**  
Rick Johnston  
MN Pollution Control Agency  
(612) 297-1788  
**President**  
Linda Lehman  
L. Lehman & Associates  
(612) 894-9359  
**President-Elect**  
Vacant  
**Secretary**  
Gordy Hess  
Sunde Engineering  
(612) 881-3344  
**Treasurer/Membership**  
Pat Bloomgren  
MN Department of Health  
(612) 623-5297  
**Editor**  
Lee Trotta  
U. S. Geological Survey  
(612) 725-7841

MINNESOTA  
GROUND WATER ASSOCIATION  
P.O. BOX 3362 ST. PAUL, MN 55165



# NITRATE SEMINAR

November 30, 1987  
1 pm to 5 pm  
Earle Brown Center  
St. Paul Campus, University of Minnesota

Cosponsored by:  
Minnesota Ground Water Association and the Water Resources Research Center, U of M

---

12:00 to 1:00	Registration
1:00 to 2:40	<u>Session I: Defining the Problem</u> Moderator: Patricia Bloomgren, Minnesota Department of Health <b>Nitrates in Public Water Supplies</b> - Richard Clark, Engineering Unit Supervisor, Minnesota Department of Health <b>Generalized Trend Data on the Occurrence of Nitrates in Surficial Sand Aquifers</b> - Dave Wall, Hydrologist, Program Development, Division of Water Quality, Minnesota Pollution Control Agency <b>Nitrate Testing - a Regional Approach</b> - Terry Lee, Environmental Health Sanitarian, Olmsted County Health Department <b>Health Impacts</b> - Rexford Singer, Associate Professor, Department of Environmental Health, University of Minnesota
2:40 to 3:00	Coffee
3:00 to 4:40	<u>Session II: Can the Nitrate Problem be Managed?</u> Moderator: Pat Brezonik, Director, Water Resources Research Center, University of Minnesota <b>Isotope Analyses for Identification of Nitrogen Sources in Ground Water in Central Minnesota</b> - Henry Anderson, Hydrologist, U.S. Geological Survey <b>Time Variability of Nitrates and Macropore Flows in Soils</b> - Calvin Alexander, Associate Professor, Department of Geology and Geophysics, University of Minnesota <b>Agricultural Management Practices and Nitrates in Ground Water</b> - Jim Anderson, Associate Professor and Director of the Center for Agricultural Impacts on Water Quality, University of Minnesota <b>Removal of Nitrate by Solid-Supported Liquid Membrane Device</b> - Maurice Kreevoy, Professor, Department of Chemistry, University of Minnesota
4:40 to 5:00	Discussion
5:00 to ?	Wine and Cheese

---

Registration fees: MGWA members - \$10; Professionals - \$15; Students - \$5. Registrations must be received by November 25th.

Name \_\_\_\_\_ Position \_\_\_\_\_

Affiliation \_\_\_\_\_

Address \_\_\_\_\_

---

Phone Number \_\_\_\_\_ MGWA member? \_\_\_\_\_

If you are not a member, you can join with this registration by including the \$10 yearly dues for professionals, \$5 for students, and noting on your check that dues are included.

Mail to: Patricia Bloomgren, 1114 Meadowview Drive, Stillwater MN, 55082