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# Water Current

January/February 1985

## DIRECTOR'S REPORT

A National Conference on Water Resources Research was held February 4-6, 1985 in Chevy Chase, Maryland. The conference was sponsored by the Universities Council on Water Resources under a grant from the National Science Foundation. It was organized by a planning committee composed of a number of universities and water agencies, with the assistance of the UNL Water Resources Center.

The objectives of the conference were: (1) to seek a renewed effort to re-establish a national water resources research agenda; (2) to re-state research priorities; and (3) to develop alternative working arrangements of the research community, including federal, state, university and private sector interests.

The keynote address was given by Albert H. Teich, Head of the Office of Public Sector Programs in the American Association for the Advancement of Science. He discussed the "Outlook for R&D Funding."

Another interesting presentation was given by Tom Skirbunt, staff aide for Senator James Abdnor (SD) who advised participants to begin looking elsewhere than the federal government for water research funding. However, he noted that if funding for water resources research is to be obtained from the federal government, two steps must first be accomplished: (1) An effective lobby for water resources research must be established on Capitol Hill. (2) A well-planned consensus national water resources research agenda must be developed.

Two sessions of concurrent workshops were held. The first session involved aspects of implementing a national water research agenda, and the workshops were followed with separate presentations on these aspects. The second session of workshops involved eight Water Research Agenda Areas: (1) Agriculture; (2) Domestic; (3) Industrial; (4) Biological Communities; (5) Flood Control; (6) Drought; (7) Water quality; and (8) Water Resources Management. From these discussions it is hoped that a national water resources research agenda with research priorities can be developed.

A conference proceedings is being prepared in which preconference working papers will be revised as a result of conference workshop discussions.



NEBRASKA WATER RESOURCES CENTER



## 1985 NEBRASKA WATER CONFERENCE

The 1985 Nebraska Water Conference with the theme "Water Management Implementation" will be held March 19-20, 1985 at the Nebraska Center for Continuing Education in Lincoln.

The conference is divided into three main sessions: (1) Implementing Legislation and Plans; (2) Economics and Financing of Water Projects; and (3) Implementing Groundwater Protection Strategy. Marian Mlay, Director of EPA's Office of Groundwater Protection will discuss the "National Groundwater Protection Strategy" in the third session. Brig. General Charles E. Dominy, newly promoted Missouri River Division Engineer will talk about "Future Financing of Federal Water Projects" during the second session. The keynote address on "Translating Plans into Action: The Technical-Social Link" will be presented by Warren Viessman, Jr., Chairman of the Dept. of Environmental Engineering Science at the University of Florida, and former director of the Nebraska Water Resources Center at UNL. Governor Robert Kerrey will speak at the conference luncheon on March 19.

Conference pre-registration fee is \$60 and \$65 for registration on the day of the conference.

For additional information on the conference program, contact the Nebraska Water Resources Center. To register for the conference, contact Department of Conferences and Institutes, 205 Nebraska Center, University of Nebraska, Lincoln, NE 68583.

## WATER RESOURCES RESEARCH PROPOSALS

The U. S. Geological Survey has released guidelines for submission of research proposals for the Section 105 Matching Grant Program under the 1984 Water Resources Research Act (P.L. 98-242). This is a nationally competitive grant program open to water resources institutes, qualified educational institutions, private foundations, private firms, individuals, and agencies of local or state government.

The Water Center has issued a request for proposals for the Section 105 program. To be eligible, proposals must be received by the U.S. Geological Survey no later than April 15, 1985. Proposals should be no more than three years in duration and should be within the range of \$50,000 to \$300,000 combined federal and matching funds. Matching funds must be on a dollar-for-dollar basis, but federal funds are limited to not more than \$150,000.

Proposals in the following particular areas of interest will be given extra consideration in the evaluation process: (1) better utilization of existing water supplies; (2) management techniques for future water demand and supply; (3) contamination of groundwater and surface water supplies; and (4) geologic controls on the hydrologic cycle.

The Nebraska Water Resources Center will work with principal investigators in developing research proposals and budgets, University budget forms and signature sheets. For additional information and a copy of exact research proposal guidelines, contact the Nebraska Water Resources Center.

## 20-YEAR REPORT AVAILABLE

The Nebraska Water Resources Center was established at the University of Nebraska in November 1964 as a result of the Water Resources Research Act of 1964. To commemorate the 20-year anniversary of this act and the Center's founding, we are pleased to announce the publication of a 20-year report on the Water Center.

Entitled "Nebraska Water Resources Center: 20 Years of Progress — A Prelude to the Future," the report highlights the Water Center's contributions to Nebraska and the nation as a result of the Water Resources Research Act of 1964. It documents why the network of state water institutes was created and what the Nebraska Water Resources Center has accomplished.

To obtain a free copy of this report, write to the Nebraska Water Resources Center.



## AIKEN REVIEWS 1985 WATER BILLS

Groundwater quality protection is likely to be a major water policy issue in this session of the Nebraska Unicameral, according to David Aiken, University of Nebraska-Lincoln extension water law specialist.

"Major legislative issues include chemigation and nitrate regulations, groundwater recharge and water project development financing," Aiken said.

Two bills, LB 227 and LB 284, would regulate chemigation, the use of center pivots to apply chemicals. "LB 227 is likely to encounter opposition," Aiken said, "since most existing chemigation users would be required to modify their systems to separate the chemical pipe from the well pump." LB 227 would be enforced by Natural Resources Districts. Most NRDs do not currently inspect chemigation systems to ensure compliance with check valve requirements, and this bill does not provide funds for an inspection program.

Aiken explained that LB 284 would authorize the NRDs to regulate chemigation systems under direction of the Nebraska Department of Environmental Control.

Other water-related legislative developments cited by Aiken include:

—LB 102: This bill would amend LB 1106, 1984's major water legislation and would take effect February 15, 1985. It would make technical amendments to LB 1106 provisions relating to water project revenue bonding to allow water project sponsors to issue revenue bonds to help pay for project construction. The amendment to LB 1106 would also modify NRC appointment procedures if the governor did not select a director of Natural Resources within 45 days of receiving NRC nominations.

"Perhaps the most important proposed change to LB 1106 is the modification of instream flow appropriation procedures," Aiken said. It would authorize the instream appropriation to be obtained directly by the NRD from Nebraska Game and Parks Commission instead of the Nebraska Department of Water Resources. "However, LB 102 does not address one of the major areas of uncertainty about LB 1106 — the role of the Water Management Board regarding endangered species consultation," Aiken said.

LB 103: This bill concerning low hazard dams would modify provisions under existing statutes which require permits from the Nebraska Department of water Resources to construct reservoirs.

LB 124: This bill would extend the life of groundwater conservation districts from "within 90 days of January 1, 1987 to within 90 days of January 1, 1992."

LB 217: The Petroleum Products and Hazardous Substances Storage and Handling Act would authorize the Department of Environmental Control (DEC) and the State Fire Marshal to regulate hazardous substances with DEC preventing pollution and the Fire Marshal preventing safety hazards. "If a wholly, or partially, underground storage tank containing petroleum products or hazard substances leaks, the Fire Marshal would be authorized to take any actions needed to assure immediate public safety. The DEC would be authorized to require the tank owner to recover the material which leaked from the tank," Aiken explained. And, Aiken said, LB 217 does not require that any groundwater polluted by a leaky tank be restored to its original quality, leaving the issue of the extent that groundwater quality restoration will be required to DEC.

Pat Larsen  
Public Information Specialist



## RESEARCH REVIEW

Project Title: *Evaluation of Legal and Institutional Arrangements Associated with Ground Water Allocation in the Missouri River Basin States*

Principal Investigator: *J. David Aiken, Water Law Specialist and Associate Professor, Department of Agricultural Economics, UNL*

*This project evaluated ground water law and the related administrative practices of the ten Missouri River Basin states relative to the following ground water allocation issues: (1) acquisition of ground water rights; (2) non-overlying uses of ground water; (3) well interference conflicts; (4) ground water depletion; (5) surface-ground water conflicts; and (6) ground water quality. One purpose of the study was to examine how state or local administrators exercised the legal authorities given to them by state legislatures in addressing these ground water allocation issues.*

*In most Missouri River Basin states a state license or permit is required before ground water can be used for most purposes. By denying or conditioning the permit, the state can control ground water development and use. Well interference conflicts (and to a lesser degree, ground water depletion and surface-ground water conflicts) are anticipated in many basin states by conditioning ground water permits with requirements limiting interference with existing ground water users.*

*Ground water depletion policies are not well defined, although several states legislatively prohibit withdrawals exceeding ground water recharge. Several basin states have "critical area" legislation which allows special regulation of ground water development and use when ground water depletion is occurring. Colorado policies are the most definite: ground water use permits are issued only where the new well will not violate depletion criteria. Depletion rates are based on the economically recoverable quantity of ground water and recapturing the investment cost of water extraction and use facilities.*

*Surface-ground water conflict resolution policies are anticipated to some extent in some basin states by conditioning ground water use permits with requirements limiting interference with existing surface water uses. Colorado policies again are the most definite: if a proposed ground water user will interfere with previously authorized surface water uses, the ground water user must make sufficient supplemental water available to state ground water administrators to compensate for the stream depletion effect of ground water withdrawals.*

*Most basin states protect ground water quality through well drilling regulations. Several states also have well abandonment and check valve requirements.*

*Ground water management is much different from surface water management in that physical conditions vary so widely within a state and among states that generalization is difficult. Nonetheless, there are common themes and problems in ground water management which provides the challenge to those designing and implementing a state's ground water policies. A report of project results was developed for use by these ground water policy makers.*

## JOBS AVAILABLE

The Conservation and Survey Division and the Department of Geology at the University of Nebraska-Lincoln has an opening for a Senior Hydrogeologist. This is a permanent year-round appointment with appropriate tenure leading academic rank. The position is part of a teaching/research interdisciplinary curriculum in hydrology being expanded with the the University and includes a partial graduate teaching appointment.

Qualifications include a doctorate based on appropriate hydrogeologic academic programs. Knowledge of numerical modeling, low-temperature geochemistry and automated data systems is desirable. Research responsibilities will include initiating and conducting hydrogeologic research in quantitative and qualitative hydrology, low-temperature geodynamic processes and aquifer analysis.

Applications received by April 15, 1985 will be given priority. Interested applicants should submit a resume and three references to: Hydrogeologist Search, 113 Nebraska Hall, University of Nebraska, Lincoln, NE 68583-0517.

The University of Nebraska is an Equal Opportunity, Affirmative Action employer.



## CALL FOR PAPERS

The National Water Well Association is soliciting papers for a conference on "Practical Applications of Ground Water Models" to be held August 19-21, 1985 in Columbus, Ohio. Papers are invited on any topic that relates to the practical applications of the various types of ground water models in use today.

Possible topics include: (1) three dimensional modeling of ground water flow; (2) application of models to water supply development and well field design; (3) use of models in mining investigations; (4) application of models to waste disposal sites; (5) use of models in contaminant migration investigations; and (6) application of models to remedial action.

Abstracts of 300 words or less must be submitted no later than March 22, 1985. Abstracts should include the paper's title, all authors' names and affiliations. Biographical sketches for all authors, 100 words or less in paragraph form, must accompany abstracts. Full mailing address and phone numbers should be included with biographical sketches.

For additional information, contact Barbara J. Graves, Conference Coordinator, National Water Well Assoc., 500 West Wilson Bridge Road, Worthington, OH 43085. Telephone: (614) 846-9355.

## MEETINGS AND CONFERENCES

- March 4-7 Short Course in Ground Water Modeling Without Advanced Mathematics to be held in Orlando, FL. For further information, contact Linda Aller, National Water Well Association, 500 West Wilson Bridge Road, Worthington, OH, 43085.
- March 4-8 Short Course on Flood Plain Hydrology to be held at the University of Texas at Austin. For further information, contact Continuing Engineering Studies, Cockrell Hall 2.102, University of Texas at Austin, Austin, TX 78712. Telephone: (512) 471-3506.
- March 26-28 Fifth Annual Waste Management Workshop: Groundwater Protection to be held at Southern Methodist University in Dallas, TX. Registration fee \$290. For additional information, call Dr. Michael A. Collins at (214) 692-3061.
- May 5-8 AWRA Symposium on Tropical Hydrology and Second Caribbean Islands Water Resources Conference to be held in San Juan, Puerto Rico. For additional information, contact: Ferdinand Quinones, General Chairman, U.S. Geological Survey, WRD, GPO Box 4424, San Juan, Puerto Rico 00936.
- May 19-22 Conference on Clean Water Through Controlling Nonpoint Sources to be held in Kansas City, MO. Sponsored by EPA, USDA-SCS and Forest Service, USDI, Army Corps of Engineers, TVA and North American Lake Management Society. Registration fee, which includes banquet and proceedings, is \$50 before April 15 and \$75 thereafter. For additional information contact: North American Lake Management Society, P.O. Box 217, Merrifield, VA 22116.
- May 26-30 International Conference on Food and Water with the theme "Water and Water Policy in World Food Supplies" will be held at Texas A&M University in College Station, TX. Four registration, lodging and meal plans are available. For additional information, contact Jack L. Cross, Program Coordinator, Int'l Conference on Food and Water, Texas A&M University, College Station, TX 77843.
- June 17-21 Second Annual Groundwater Course entitled "Local Groundwater Management: Aquifer Contamination, Protection and Community Response" sponsored by Cornell University. Designed for local officials, managers and consultants. For additional information, contact: Diane Banfield, Programs in Professional Education, Cornell Univ., Box 731, Ithaca, NY 14853. Telephone: (607) 256-7259.



## PUBLICATIONS

The following publications have been received by the Water Resources Center during October and November 1984. They have been forwarded to C.Y. Thompson Library on UNL's East Campus for cataloging. Persons on campus may obtain the publications through UNL's library system. Others are encouraged to request copies they desire from the organization issuing the publication.

- (1) *Selective Isolation of Dissolved Organic Matter from Aquatic Systems*, Research Report 190, September 1984, U.S. Department of the Interior, Washington, D.C. 20240.
- (2) *Rural Water Districts in Illinois*, Project No. A-110-ILL, April 1984, Department of Agricultural Economics, University of Illinois at Urbana-Champaign, Urbana, IL.
- (3) *19th Annual Report of the Purdue Water Resources Research Center*, for the period October 1, 1982 to December 31, 1984, Purdue University, Water Resources Research Center, West Lafayette, IN 47907.
- (4) *Evaluation of Non-Point Pollution Control Practices and Copper Treatments on Control of Nuisance Filamentous Algae*, Technical Report 170, December, 1984, Water Resources Research Center, Purdue University, West Lafayette, IN 47907.
- (5) *A Membrane-Organic Phase Oxidation Process for the Destruction of Toxic Organics in Hazardous Wastewaters*, Research Report No. 152, August, 1984, Water Resources Research Institute, University of Kentucky, Lexington, KY.
- (6) *Identification of Soil-Water Chemical Parameters for the Prediction and Treatment of Suspended Solids in Surface Water Reservoirs of Coal Mine Lands*, Research Report No. 150, August, 1984, Water Resources Research Institute, University of Kentucky, Lexington, KY.
- (7) *Discharge and Travel Time Determinations in the Royal Spring Groundwater Basin, Kentucky*, Research Report No. 149, August, 1984, Water Resources Research Institute, University of Kentucky, Lexington, KY.
- (8) *Finite Element Simulation of Saturated-Unsaturated Subsurface Flow*, Research Report No. 155, August, 1984, Water Resources Research Institute, University of Kentucky, Lexington, KY.
- (9) *Wetlands and Coal Surface Mining: A Management Handbook*, With Particular Reference to the Illinois Basin of the Eastern Interior Coal Region, Research Report No. 154, August, 1984, Water Resources Research Institute, University of Kentucky, Lexington, KY.
- (10) *Impact Assessment of Coal Slurry Pipelines on Water Resources Utilization and Allocation*, Research Report No. 153, August, 1984, Water Resources Research Institute, University of Kentucky, Lexington, KY.
- (11) *Strategy for Protection of Underground Water in Illinois*, Special Report No. 8 of the Illinois State Water Plan Task Force, October 1984, Illinois Environmental Protection Agency, Springfield, IL.
- (12) *Mathematical Models and Optimization Techniques for Use in Analysis and Design of Wastewater Treatment Systems*, Research Report 194, November 1984, Water Resources Research Center, University of Illinois, Urbana, IL 61801.

## WATER CURRENT

*Water Current* is published by the Nebraska Water Resources Center (NWRC), which is a division of the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln.

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