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Uncovering the Hidden Resource: Groundwater
Law, Hydrology, and Policy in the 1990s (Summer
Conference, June 15-17)

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6-15-1992


AGENDA: Uncovering the Hidden Resource: Groundwater Law, Hydrology and Policy in the 1990s

University of Colorado Boulder. Natural Resources Law Center

Rocky Mountain Ground-Water Conference (1992)

Colorado Ground-Water Association

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**UNCOVERING THE HIDDEN RESOURCE: GROUNDWATER
LAW, HYDROLOGY, AND POLICY IN THE 1990S**

Sponsored by
Natural Resources Law Center
University of Colorado School of Law
and the
Rocky Mountain Ground-Water Conference
organized by the
Colorado Ground-Water Association

* Sessions marked with asterisks will be joint.

Monday, June 15, 1992

Morning (Joint Session): Overview of the Resource and the Law

This session will explain the fundamentals of groundwater hydrology and the legal principles of groundwater allocation and management that have developed in response to each of four examples of groundwater problems.

- *8:30 Welcome
 Sarah F. Bates, Natural Resources Law Center
 Amy Lange, P.E., President, Colorado Ground-Water Association
- *8:40 A [Very Brief] Primer on Groundwater Law
 Lawrence J. MacDonnell, Natural Resources Law Center
- *9:00 Fundamental Groundwater Hydrology and Well Hydraulics
 Ed Gutentag, U.S. Geological Survey, Lakewood, Colorado
- *9:30 Well-to-well Interference and Groundwater Mining: the Legal Framework
 Prof. David Aiken, Dept of Agricultural Economics, University of
 Nebraska
- *10:00 Break
- *10:20 Aquifer/Stream Relationships and Aquifer Recharge
 Robert Longenbaugh, Professional Engineer, Lakewood, Colorado
- *10:50 The Legal Framework for Aquifer Issues
 Prof. Douglas Grant, University of Idaho School of Law
- *11:20 Discussion

*11:45 Lunch Speaker: Professor Albert Utton, University of New Mexico School of Law, International Groundwater Issues in the U.S.-Mexico Border Region (East Dining Room, lower level UMC)

Monday Afternoon (Legal Session): Case Studies--Issues in Groundwater Development

The principles of groundwater hydrology and law outlined in the morning session will be illustrated in the context of current groundwater development proposals in Colorado and Nevada.

1:15 Exporting Groundwater from Colorado's San Luis Valley: The AWDI Proposal

Panel:

Eric Harmon, P.E., Vice President, HRS Water Consultants, Inc.,
Denver

Charles B. White, Brownstein, Hyatt, Farber & Madden, Denver

Steven E. Vandiver, Division III Engineer, Alamosa, Colorado

Discussion and questions

3:00 Break

3:20 Meeting Urban Water Demands in Nevada: The Las Vegas Proposal

Panel:

Terry Katzer, Las Vegas Water District, Nevada

George Benesch, Benesch & Fermoile, Reno, Nevada

E. Michael Turnipseed, Nevada State Engineer, Division of Water
Resources, Carson City, Nevada

Discussion and questions

5:00 End of day

*6:15 Cookout on Flagstaff Mtn. (must preregister)

Monday Afternoon (Technical Session): Groundwater Modeling Issues in Groundwater Development

This session will explore the technical and legal issues concerning groundwater modeling for groundwater development. Experienced professionals will discuss the technical aspects of model selection, conceptualization, data input, parameter estimation, calibration, verification, sensitivity analysis, and error analysis. Following technical discussions, the speakers will be joined by an experienced water attorney in a panel discussion to examine how these technical issues are often amplified and resolved in a litigation setting.

- 1:15 Types of Models (Pros and Cons)/ Choosing the Right Model
Paul K.M. van der Heijde, Director, Institute for Ground Water
Research and Education, Colorado School of Mines
- 2:00 Conceptualization, Data Input, and Parameter Estimation
Prof. Ken Kolm, Dept. of Geology and Geological Engineering,
Colorado School of Mines
- 3:00 Break
- 3:20 Model Calibration and Verification
Paul K.M. van der Heijde
- 3:55 Sensitivity and Error Analyses
Devraj Sharma, Principia Mathematica, Inc., Lakewood, Colorado
- 4:30 Panel Discussion
Technical speakers and William Paddock, Attorney, Carlson,
Hammond & Paddock, Denver
- 5:00 End of day
- *6:15 Cookout on Flagstaff Mtn. (**must preregister**); rain location, UMC

Tuesday, June 16, 1992

Morning (Legal Session): Case Studies--Issues in Groundwater Management

Alternative approaches to managing groundwater resources will be explored, including state-coordinated basin management in Arizona and locally-initiated efforts in Southern California. A current controversy over groundwater development and endangered species protection in Texas illustrates the complex pressures facing groundwater managers and users.

- 8:30 Arizona's Groundwater Management Approach: The Tucson Experience

Prof. Robert Glennon, University of Arizona College of Law
Kathy Jacobs, Tucson Active Management Area, Arizona
Department of Water Resources
- 9:30 Managing Groundwater Quality and Quantity: Comparative Approaches of Southern California Water Basins

Prof. William Blomquist, Dept. of Political Science, Indiana University, Indianapolis
Susan M. Trager, Trager Law Offices, Irvine, California

10:30 Break

10:50 The Edwards Aquifer, Texas: Sorting Out Competing Uses in an Unregulated Resource

Russell L. Masters, Edwards Underground Water District, San Antonio, Texas
Douglas G. Caroom, Bickerstaff, Heath & Smiley, Austin, Texas
Stuart Henry, Henry, Kelly & Lowere, Austin, Texas

12:15 Lunch (on your own)

Tuesday Morning (Technical Session): Development and Presentation of Technical Evidence

By their very nature, groundwater litigation cases often present unique challenges for groundwater professionals who may be called upon to act as expert witnesses. This session will dive into the nuts and bolts of development and presentation of technical evidence by experienced groundwater professionals. Depositions and oral testimony will be examined by an experienced water attorney. New computer innovations will also be reviewed, which may provide valuable litigation support.

8:30 Data. Correspondence. Reports. and Exhibits for Groundwater Rights Cases

Robert Brogden, Bishop, Brogden Associates, Lakewood

9:10 Data. Correspondence. Reports. and Exhibits for Groundwater Quality/Hazardous Waste Cases

James M. Kerr, Jr. Delta Environmental Consultants, Denver

9:50 Depositions and Oral Testimony

M.E. (Sandy) MacDougall, M.E. MacDougall Law Offices, Colorado Springs

10:30 Break

- 10:50 New Hardware and Software Innovations
 Prof. Keith Turner, Dept. of Geology and Geological Engineering,
 Colorado School of Mines
- 11:50 Panel Discussion
- 12:15 Lunch (on your own)

Tuesday Afternoon (Joint Session): Legal and Technical Practice Issues

Experienced lawyers and groundwater professionals will discuss the legal and technical aspects of case preparation and will simulate an expert witness examination to illustrate how factual questions are developed in a groundwater case. Following the simulation, a water court judge will provide his observations on the use of modeling and expert witnesses in groundwater litigation. Many of the techniques and suggestions discussed in this session will pertain to administrative hearings in other states as well as to Colorado's water court system.

- *1:45 Case preparation: The Lawyer's Role
 Michael D. Shimmin, Vranesh & Raisch, Boulder
- *2:15 Case preparation: The Expert Witness' Role
 Bruce Kroeker, Ted Zorich & Associates, Inc., Lakewood, Colorado
- *2:45 Demonstration: Groundwater Attorney and Expert Witness in Action
 William A. Paddock, Carlson, Hammond & Paddock, Denver
 Dr. Devraj Sharma, Principia Mathematica, Lakewood, Colorado
- *2:45 Introduction to the Demonstration
- *3:15 Break
- *3:35 Demonstration of Direct Examination
- *4:30 The View from the Bench: the Perspective of a Water Court Judge
 Robert A. Behrman, District Judge, Division I Water Court,
 Greeley, Colorado
- *5:00 Reception, UMC patio

Wednesday, June 17, 1992

Morning and afternoon (Joint Sessions): Groundwater Quality

Morning and afternoon sessions will cover the protection of groundwater quality, including the nature of groundwater quality problems and federal and state approaches to prevent groundwater contamination. Two case studies illustrate the difficulties facing local, state, and federal officials attempting to deal with contaminated underground drinking water supplies. The final speaker will provide a critical perspective of the costs and benefits of modern groundwater clean-up approaches.

*8:30 Groundwater Contamination: What You Need to Know

Prof. David McWhorter, Dept of Agricultural and Chemical
Engineering, Colorado State University, Fort Collins

*9:10 Setting the Standards: Federal Groundwater Protection Programs

Katharine Teter, Gorsuch, Kirgis, Campbell, Walker & Grover,
Denver

*9:50 Opportunities for Innovation: State Strategies for Groundwater Protection

Larry Morandi, National Council of State Legislatures, Denver
Paul Frohardt, Water Quality Control Commission, Colorado Dept.
of Health, Denver

10:40 Break

Wednesday (Legal Session) Case Studies of Groundwater Contamination Issues

11:00 Quality Meets Quantity: San Gabriel Valley, California

Background:

Mark Klaiman, Office of Regional Counsel, U.S. EPA, San
Francisco

Panel discussion:

Thomas Stetson, Stetson Associates, San Clemente, California
Victor Gleason, Senior Deputy General Counsel,
Metropolitan Water District of
Southern California, Los Angeles
Mark Klaiman, EPA

Wednesday (Technical Session) Water Quality Modeling

- 11:00 Transport Modeling: Technical and Legal Issues
 Adrian Brown, Adrian Brown Consultants, Inc., Denver
- 11:45 Open discussion
- 12:15 Lunch (on your own)
- *1:30 Rocky Mountain Arsenal, Colorado: A Success Story?
 Background:
 Connally E. Mears, Coordinator, Clean Up of Rocky
 Mountain Arsenal, U.S. EPA, Denver
 Panel discussion:
 Scott G. Mefford, Hydrokinetics, moderator
 David M. Brown, Moses, Wittemyer, Harrison & Woodruff,
 Boulder
 Connally E. Mears, EPA
 Lt. Col. Jeffrey Guilford, Chief Counsel, Rocky Mountain
 Arsenal, Denver
 Jacqueline Hernandez Berardini, Office of the Environment,
 Colorado Department of Health
- *2:35 Groundwater Clean-up: Is it Worth it?
 Carolyn B. Doty, Policy and Risk Analyst, Automated Sciences
 Group, Inc., Oakridge, Tennessee
- 3:35 End of program

**Uncovering the Hidden Resource:
Groundwater Law, Hydrology and Policy in the 1990s
June 15-17, 1992**

Faculty

Prof. David Aiken
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B.A. Hastings College, 1972

J.D. George Washington University, 1975

Has been with the Department of Agricultural Economics at the University of Nebraska since 1975. Has over 100 technical and popular publications on water rights, natural resources, environmental protection, and agricultural law, including Ground Water Mining Law and Policy, and Ground Water Mining and Western Water Rights Law: The Nebraska Experience. Past Chairman of the Natural Resources Section of the Nebraska State Bar Association.

Robert A. Behrman
District Judge
Division I Water Court
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Greeley, CO 80632
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Undergraduate degree, Yale University

Law degree, Harvard Law

Has been since 1978 Water Judge of Colorado Water Division No. 1, which comprises the South Platte and other river basins, covers the entire northeast quarter of Colorado, and includes about 70% of the state's population (Denver, Boulder, Fort Collins, Greeley, Longmont, Loveland, Sterling, Fort Morgan, and Brighton). A heavy trial schedule is maintained.

George Benesch
Attorney and Partner
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B.S. Agricultural Economics, University of Nevada at Reno, 1972

M.S. Resource Economics, University of Nevada at Reno, 1977

J.D. McGeorge School of Law, Univ. of the Pacific, Sacramento, 1982

Was Deputy Attorney General representing the Nevada State Engineer and

Division of Water Resources for 7 years. Currently is counsel for Nevada counties in opposition to numerous large scale water exportation projects: Nye County in opposition to Las Vegas Valley Water District; Lyon County in opposition to the Aqueduct I proposed transfers; Humboldt and Lander Counties in opposition to the Eco-Vision project; and Lassen County, California in opposition to the Honey Lake Basin transfer to Reno.

Jacqueline Hernandez Berardini
Assistant to the Director
Office of the Environment
Colorado Department of Health
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Principal responsibilities include cross-media and cross-program integration, strategic planning for risk reduction, oversight of federal facilities, and emergency planning and response. She is the governor's representative to the Western Governors Association WIPP Transport Technical Group and the WGA Western Interstate Energy Board. Previously she was Deputy Attorney General for Colorado's CERCLA Litigation Section, where she was the lead supervising attorney on the Rocky Mountain Arsenal litigation.

Professor William Blomquist
Department of Political Science
Indiana University
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Has been studying water policy and institutions for several years. Recent publications include Dividing the Water: Governing Groundwater in Southern California (San Francisco: ICS Press, 1992); the U.S. Advisory Commission on Intergovernmental Relations report, Coordinating Water Resources in the Federal System (Washington, DC: U.S. ACIR, 1991); and the 8-volume monograph series, The Performance of Institutions for Groundwater Management (Bloomington: Workshop in Political Theory and Policy Analysis '87-91).

Robert Brodgen
Vice President, Bishop-Brogden Associates, Inc.
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(303) 980-8654; FAX (303) 980-8967
B.S., Geology, University of Nebraska, 1968

M.S., Civil Engineering, University of Nebraska, 1972
Project development and management, 20+ years experience in surface and groundwater projects, work mostly in Colorado and in surrounding states, worked on Nebraska and South Dakota geological surveys and USGS in Colorado.

Adrian Brown

President, Adrian Brown Consultants, Inc.

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Bachelor in Civil Engineering, Monash Univ., Victoria, Australia (1967)

Master of Engineering Science, Monash University (1970)

Master of Business Administration, Monash University (1974)

Active technical consultant in ground-water flow and solute transport. Recent activities include direction of ground-water remediation at a number of major Superfund sites, performance of mining hydrology evaluations and dewatering designs, and provision of expert witness testimony in several major ground-water contamination cases.

David M. Brown

Moses, Wittemyer, Harrison & Woodruff

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B.S. Civil Engineering, University of Illinois, 1973

M.S. Environmental Engineering, Stanford University, 1975

J.D. University of Colorado Law School, 1976

M.B.A. (Executive Program) University of California, Los Angeles, 1990

Acted as special water counsel since 1977 to South Adams Water and Sanitation District, the potentially affected public from Rocky Mountain Arsenal. Forged settlement with U.S. Army, EPA and Colorado Dept. of Health for funding and construction of \$12 million Klein Water Treatment Facility to treat contaminants reaching South Adams' alluvial wells from both Arsenal and offpost sources.

Douglas G. Caroom

Bickerstaff, Heath & Smiley

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B.A. and M.A. (Zoology), University of Texas at Austin

J.D. with honors, University of Texas Law School

Primary areas of expertise include state water law, state administrative law, state

water pollution law, and the law of interstate compacts. Also, waste disposal, air pollution regulation, noise regulation and environmental impact litigation. He has been Adjunct Professor of Water Law, University of Texas School of Law.

Carolyn Doty
Policy & Risk Analyst
Automated Sciences Group, Inc.
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Oak Ridge, TN 37830
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B.S. and M.S. from the University of Tennessee.
Oversees risk assessment methodology development and provides technical support to federal agencies in the areas of risk assessment and risk management. Recent research at Oak Ridge National Laboratory's Center for Risk Management includes a study of the effectiveness of remedial technologies at hazardous waste sites and a study of cost growth associated with remedial alternatives.

Paul Frohardt
Administrator
Water Quality Control Commission
Colorado Department of Health
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Graduate of Harvard College and Harvard Law School.
Master in Public Policy, Kennedy School of Government at Harvard.
In 1989 spent nine months establishing and managing an expanded Health Department program monitoring and regulating the Rocky Flats Nuclear Weapons Plant. Previously was a partner with the law firm Holland & Hart, specializing in environmental and water law.

Victor E. Gleason
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At the Metropolitan Water District of Southern California works primarily with water resources, including groundwater rights and groundwater conjunctive use. Has represented the district in several groundwater basin water rights adjudications, including the San Gabriel Valley adjudication. Has published

articles on California groundwater storage rights, including Water Projects Go Underground, 5 Ecology Law Quarterly 625, and Los Angeles v. San Fernando: Groundwater Management in the Grand Tradition 4 Hastings Constitutional Law Quarterly 703.

Professor Robert Glennon
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J.D. Boston College Law School, 1969
M.A. 1972, Ph.D. 1981, Brandeis University
Teaches American Legal History, Constitutional Law, Federal Jurisdiction, and Water Law. Member, University Committee on Natural Resources Policy and Administration; Advisory Committee to Water Resources Research Center. Publications include "Because That's Where the Water Is": Retiring Current Water Uses to Achieve the Safe-Yield Objective of the Arizona Groundwater Management Act, 33 Arizona Law Review 89 (1991).

Professor Douglas L. Grant
University of Idaho
School of Law
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J.D. University of Colorado, 1967 (editor-in-chief Law Review)
Prior to entering law teaching, was an associate at Davis, Graham & Stubbs in Denver. Has written a number of law review articles on water law, including several on groundwater. Most recently wrote the chapters on interstate water allocation in the multivolume treatise, Waters and Water Rights (1991 ed.).

Lt. Col. Jeffrey Guilford
Chief Counsel
Rocky Mountain Arsenal
Commerce City, CO 80022
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B.A. California State University at Los Angeles
J.D. Loyola Law School, Loyola-Marymount University, Los Angeles
LL.M. University of Virginia Law School
Current assignment: Chief Counsel, Program Manager for Rocky Mountain Arsenal. Previously Instructor and Chief, Legal Assistance Branch, Administrative and Civil Law Division, The Judge Advocate General's School, Charlottesville, Virginia. (1986-90). Editor (and author of selected sections), Environmental Law

(a correspondence course issued by The Judge Advocate General's School); editor (and author of selected sections), chapter 5, "Environmental Law," Dept of the Army Pamphlet 27-21.

E. D. Gutentag

Hydrologist, U.S. Geological Survey

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B.S., Brooklyn College, 1953

M.S., University of Kansas, 1958

One of the founders of the Colorado Ground-Water Association. Member of the ASTM committee for developing standards for aquifer test design and interpretation. P.I. for Past Discharge Activity, Quarterly Regional Hydrology Study for Hydrologic Investigations Program, Yucca Mt. Project, Water Resource Division, USGS.

Eric Harmon, P.E.

Vice President

HRS Water Consultants, Inc.

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Registered Professional Engineer in Colorado and Wyoming, with degrees in Geophysical Engineering and Hydrogeology, Colorado School of Mines.

Has specialized in Colorado and Rocky Mountain West ground-water development issues, with special emphasis on ground-water exploration, wellfield design, pumping interference, conflicting claim, and conjunctive use. Served as Project Manager ('86-87) for an extensive study of the deep ground water resources of the San Luis Valley. During the recent AWDI trial in Alamosa, he testified extensively on the geologic framework of the aquifers of the San Luis Valley on behalf of Colorado Division of Wildlife and the U.S. Dept. of Justice.

Stuart Henry

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B.A. Economics and Political Science, University of Texas, Austin

J.D. South Texas College of Law, Houston, emphasis on Urban and Environmental Law

Air Pollution Control Institute, UCLA, graduate credit in Public Administration of Pollution Control

Private practice of law since 1974, limited to environmental litigation and administrative law. Legal services for clients include: legal counsel for State Sierra Club; recovery of damages for flooding, death of trees, salt water pollution of fresh water, and oil fires and spills; opposition to waste discharge permits, construction of water reservoir projects and dams, water rights, solid waste permits, industrial waste disposal by injection well and air pollution permits.

Katharine L. Jacobs
Director, Tucson Active Management Area
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B.A. Middlebury College, Vermont, in biology (1977)
M.L.A. in Environmental Planning, University of California, Berkeley (1981)
Has worked for the Arizona Department of Water Resources in several capacities since 1981, and in her position as Director of the Tucson Active Management Area since 1988. Responsibilities include planning, operations, compliance, personnel and budget-related activities, as well as policy development and consensus building in solving water resource management problems. She represents southern Arizona in statewide water issues, and works with community leaders and other agencies to address a variety of local resource problems.

Terry Katzer
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B.S. Geology, Mackay School of Mines, University of Nevada (1958)
Graduate study hydrogeology, University of Nevada (1962-64)
Since 1985 at the Las Vegas Valley Water District he has: initiated and completed a ground-water quality project and artificial recharge feasibility projects; initiated draft legislation to change Nevada ground-water law to recognize and define the administrative process for artificial recharge; initiated and directed major ground-water resource development projects in eastern and southern Nevada.

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B.S., Geology, Franklin & Marshall College
M.S., Geology, Tugers Universtiy
Post Graduate classes in Environmental Law
Litigation support and management on varous RCRA projects

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B.A., Union College, Schenectady, New York (1984)
M.S. School of Oriental and African Studies, University of London (1985)
J.D. University of Chicago Law School (1988)
Has been with the EPA Region IX Hazardous Waste Division since December 1989, responsible for representing the U.S. EPA in CERCLA removal and remedial enforcement actions, RCRA administrative enforcement actions and permitting matters; staff attorney responsible for regional implementation of Oil Pollution Act. Previously was in private practice concentrating in environmental and toxic tort litigation.

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B.S., Geological Sciences, Lehigh University
M.S. & Ph.D., University of Wyoming
Professional Geologist (AIPG), Registered Hydrogeologist (AIH), Engineer-In-Training (Colorado)
Developed tradework-based conceptual and numerical models of hydrologic systems using Geoscientific Information Systems -- Yucca Mountain, Nevada; San Luis Valley, Colorado; Jackson Hole, Wyoming; Spanish Valley, Utah.

Bruce E. Kroeker
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M.S. Agricultural Engineering, Colorado State University, 1980
B.S., Environmental Science, East Central Oklahoma State University, 1977
Specializes in the development, management, and protection of water resources.
Has assisted clients with projects involving the development of ground water

supplies, assessment and cleanup of ground water contamination incidents, and interrelationships between ground water and surface water, including numerous projects associated with litigation and regulatory enforcement orders.

Robert Longenbaugh
Consultant, Water Resources Engineer
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B.S. (1957) & M.S. (1962), Agricultural Engineering, Colorado State University
Ph.D. work, University of California, Davis (1967-70)
19 years teaching, 11 years Assistant State Engineer. Taught and did research and work on groundwater topics for over 30 years. Areas of expertise: soil-water-plant relationships, meteorology, water resource planning, pumping plants and costs, irrigated agriculture.

Malcom Edward (Sandy) MacDougall
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B.S., Colorado State University
L.L.D, University of Colorado School of Law
Present law practice consists of the following: Water - 30%; Natural Resources (Mining) - 20%; Commercial Litigation - 30%; General Business Practice - 10%; Special District and Municipal - 10%.

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B.A. University of Michigan (1966)
J.D. University of Denver (1972)
Ph.D. Colorado School of Mines (1974)
Became Director of the Natural Resources Law Center in 1983. Is also adjunct professor at the University of Colorado School of Law. Recent publications include Controlling Water Use: The Unfinished Business of Water Quality Protection (coauthor, 1991); "Approaches to Groundwater Quality Protection in the Western United States," 27 Water Resources Research 259 (1991); and "Transferring the Uses of Water in the West," 43 Okla. L. Rev. 119 (1991).

Russell L. Masters
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Has been with Edwards Underground Water District since 1981. Formerly Chief, Water Quality Planning Division, San Antonio River Authority. Publications include the Edwards Underground Water District Drought Management Plan (1988) and "Results of Investigation of Trace Volatile Organics in the Edwards Aquifer in Northern San Antonio," (1984).

Prof. Dave McWhorter
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Petroleum Engineer, Colorado School of Mines, 1965
M.S., Civil Engineering, Colorado State University, 1966
Ph.D., Agricultural Engineering, Colorado State University, 1971
Teaches graduate level courses in ground-water hydrology, contaminant transport in ground-water, and multi-fluid flow in porous media. Major research is in the area of ground-water contamination by dense nonaqueous phase liquids. Participates on the technical advisory boards (committees) for several large corporations with problems of ground-water contamination.

Connally E. Mears
Coordinator, Clean Up of Rocky Mountain Arsenal
U.S. EPA, Region VIII
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B.S. Aerospace Engineering, University of Arizona
M.S. Mechanical Engineering, specializing in air pollution control, University of Kentucky
At EPA Region VIII has directed air pollution compliance evaluations and enforcement actions, specializing in the steel industry. Has evaluated and permitted industrial hazardous waste generation and management activities. Since 1985 has coordinated the cleanup of the Rocky Mountain Arsenal, directing an 11-person EPA team to oversee cleanup activities by the Army and Shell. His team earned EPA's regional and national "Superfund Team of the Year" award in 1991.

Scott G. Mefford
Hydrokinetics, Inc
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Golden, CO 80401

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In 1983 co-founded Hydrokinetics, Inc., a geotechnical consulting firm specializing in geohydrology, and engineering geology investigations. Senior project manager, working specifically in the areas groundwater contamination, remediation of underground releases of petroleum products, water rights development, well design, and aquifer analysis. Serves in an appointed position on the Lowry Monitor Committee, a governmental commission for the remediation of the Lowry Superfund Site.

Larry Morandi
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Program manager for Energy, Science & Natural Resources with the National Conference of State Legislatures in Denver, and director of NCSL's groundwater protection project. Recently completed assessment for Iowa legislature of that state's implementation of its 1987 Groundwater Protection Act (a model for other states considering policies to reduce agricultural chemical use), which will be published in 1992. Other publications include Financing Clean Water: Groundwater, 1991; State Groundwater Protection Legislation: A Proposed Comprehensive Policy Framework (1990).

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B.A. University of Colorado, 1974

J.D. University of Colorado, 1978

Trial attorney representing various state, municipal, agricultural, development and individual interests in water rights adjudications and environmental issues. Attorney for individuals, companies, and municipalities appearing before administrative and permitting agencies with jurisdiction over ground water, surface water and water quality. Previously was First Assistant Attorney General, Water Rights Section, Colorado Attorney General's Office (1982-84).

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B.S., Madras University, India

Bachelor of Engineering with Honors, Utkal University, India

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Responsible for development, adaption, calibration, verification and application of mathematical models of fluid flow, mass and heat transport. In particular, the application of complex ground-water models, pre- and post-processors to water resource and ground-water contamination projects. Was involved in the recent AWDI case in the San Luis Valley; was responsible for ground-water modeling of the Arkansas River Basin in Kansas v. Colorado currently being conducted before the U.S. Supreme Court.

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Practice with Vranesh & Raisch, since 1978, has focused almost exclusively on water law and water project development, including adjudication of conditional and absolute water rights, both surface and underground; development, adjudication, and administration of plans for augmentation, water rights transfers, and exchange cases; general counsel to four groundwater management districts,, and practice before the Colorado Ground Water Commission.

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California licensed civil engineer. President and principal owner of Stetson Engineers, Inc., a water resources firm with offices in California, and Arizona. Is one of three Court appointed watermasters which administer the San Gabriel River Judgment of 1965. Has had long experience as an expert witness in water rights matters starting with the Arizona v. California case in the 1950s. Is a member of the Fort Peck-Montana Compact Board, representing the the Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation.

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Environmental and land use law. Client matters include compliance with the National Environmental Policy Act, Superfund remediation, regulatory permitting under the Clean Air Act, Clean Water Act, Underground Storage Tank program and RCRA. Previously Associate Regional Counsel with U.S. EPA Region VIII, responsible for Superfund mining remediation, and Assistant Regional Counsel, Water and General Law Section.

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Private practice for 19 years, specializing in working with water and wastewater agencies and landowners in planning for the conjunctive use of surface water supplies and groundwater. Current projects include: working with the recently organized Hemet-San Jacinto Pumpers Association to develop a groundwater management plan for the upper San Jacinto River; developing a water management plan for the Mojave River system; working on resource management issues on the lower Santa Ana River Basin. Is a contributing editor for California Water Law & Policy Reporter.

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Has been on the Colorado School of Mines faculty for almost 20 years, currently as Professor of Geological Engineering and Executive Director of the Institute for Ground Water Research and Education. Previously was on the faculty at the University of Toronto and worked for the Canadian and Ontario governments. Has served as a consultant concerning computer applications to geological and environmental studies for the United Nations and a number of other countries.

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Law studies at Oxford University, the University of London, and Yale Law School.
Editor-in-Chief of the Natural Resources Journal, Director of the U.S.-Mexico Transboundary Resources Center, and Professor of Law at the University of New Mexico where he formerly served as Dean. Publications include International Groundwater Law, International Environmental Law, and U.S.-Mexico Resources Issues to the Year 2000. Is chairperson of the New Mexico Interstate Stream Commission, which oversees all major rivers in the state.

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M.S., Civil Engineering, Delft University for Engineering & Sciences, 1977.
Worked at Holcomb Research Institute of Butler University in Indianapolis, 1981-91; was the primary force behind the development of the IGWMC, an internationally recognized center for ground-water modelling. Research concentrates on improving the quality of ground-water modelling and includes model screening, testing and use evaluation, and computer-based decision-support systems.

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Has been with the Colorado Division of Water Resources since 1973, in various positions with the hydrographic and dam safety branches, and since 1981 as Division III Engineer, responsible for administration of water rights in the Rio Grande basin and administration of the Rio Grande Compact. Teaches college courses on the administration of water rights at Adams State College and conducts public meetings for the education of water users and the general public.

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A shareholder in the Denver firm Brownstein, Hyatt, Farber & Strickland, with a practice emphasizing water rights, environmental law, and public land law in the Rocky Mountain states. Publications include "The Emerging Relationship Between Environmental Regulations and Colorado Water law," 53 University of Colorado Law Review 597 (1982).