



Association of  
Environmental  
Engineering  
Professors

# NEWSLETTER

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MAY 1983

## PRESIDENT'S CORNER

*When the well's dry, we know the worth of water.*

Richard Saunders (Benjamin Franklin)

Poor Richard's Almanac

January 1746

If Benjamin Franklin were to advise his readers in the 1980s, he would have said -- when our groundwaters are polluted from toxic wastes, we know the price of cleanup. EPA's lack of commitment to preserving the environment and protecting the public health has placed it on the front pages of our newspapers for the last couple of months. During the time I prepared this message Anne Burford resigned and John W. Hernandez, Jr., was Acting Administrator for about two weeks before President Reagan named William Ruckelshaus as the new Administrator of EPA, subject to Senate confirmation.

The personnel changes at EPA are not surprising. The continuing controversy at EPA guaranteed these changes. EPA comes under the executive branch and, therefore, President Reagan is entitled to choose people compatible with his views to run the agency. These political appointments have been accepted, in the past, by the Senate. They will come under closer scrutiny in the future. What has concerned us from the academic arena of environmental science and engineering is not so much the top level political appointments, but the fact that political appointees reach far down into the lower levels of EPA. It is difficult to find qualified scientists and engineers in policy-making positions in the Agency. Hopefully this will change. Can AEEP influence such a change? Probably not!

AEEP (AAPSE) was founded with the intent of influencing federal legislation and federal agencies that deal with the environmental field. Over the years we have voiced our concerns, we hope that sometimes we've been heard. The realities of Washington are such that it is difficult for an organization such as AEEP to have an impact. Because of EPA's troubles and the continuing controversy there, the subcommittees and committees of Congress will be critically reviewing EPA's budget request. AEEP has scientific credibility and the opportunity to be heard.

In my *Note to Members* on March 2, I urged you to write members of Congress regarding EPA's budget reduction for research and their proposed transfer of the *Exploratory Grants Program* to NSF. To those of you who have written, thanks! If you haven't written, please take a few minutes and write now.

Senator Daniel Patrick Moynihan (D, N.Y.) has proposed that EPA should be an independent government agency. As an independent agency, it would be modeled after government agencies such as the Nuclear Regulatory Commission. The proposal calls for a five-member, bi-partisan board appointed by the President and subject to Senate confirmation. As an independent agency, EPA would submit its own budget to Congress. Its budget would not be subjected to OMB (Office of Management and Budget) reviews. Please give me or any Board Member your views on this proposal. Hope to see you all at Purdue.

James K. Edzwald

## AEEP NEWS AND ANNOUNCEMENTS

### AEEP Purdue Workshop Schedule Particles and Particle Surfaces

Conducted by:

Desmond F. Lawler, Assistant Professor,  
Civil Engineering, University of Texas at  
Austin

Egon Matijevic, Professor, Chemistry,  
Clarkson College of Technology

James J. Morgan, Professor, Environmental  
Engineering Science, California Institute of  
Technology

Program	Monday, May 9, 1983
8:00	Registration
8:30	Introduction Lawler
8:40	Surface Chemistry in Aqueous Systems Morgan
9:40	Preparation and Characterization of Uniform Particles Matijevic
10:40	BREAK
11:00	Interactions in Mixed Colloidal Systems Matijevic
12:00	LUNCH
1:30	Physical Aspects of Particle Transport and Interactions Lawler

2:45 BREAK

3:00 Chemical Reactions at Surfaces Morgan

4:00 General Discussion

4:30 CLOSING

The workshop will be held at Purdue (West Lafayette, Indiana) and is free to AEEP members and students. For further information, write to:

Desmond F. Lawler  
Dept. of Civil Engineering ECJ8.6  
Univ. of Texas  
Austin, Texas 78712  
(512) 471-5602

### AEEP-AWWA Seminar Program

The AEEP seminar at the AWWA conference in Las Vegas is scheduled for Monday, June 6, at 8:00 p.m. The topic is *Corrosion and Corrosion Control*. The program is as follows:

1. Overview and Principles — J.E. Ferguson
2. Biologically Mediated Corrosion — J.T. O'Connor
3. Practical Applications of Theory and Case Studies — J.E. Singley

For further information, contact Gary Amy, who is this year's chairman.

G.L. Amy  
Dept. of Civil Engineering ECJ8.6  
Univ. of Arizona  
Tucson, Arizona 85721  
(602) 626-2266

### AEEP Member Honored

J. Charles Jennett, Dean of Clemson University's College of Engineering, has been named Educator of the Year by the Piedmont chapter of the South Carolina Society of Professional Engineers.

Congratulations are expressed to Dean Jennett, who is an AEEP member.

### AEEP Luncheon

The next AEEP Luncheon will be held on Tuesday, May 10, 1983, at noon during the Purdue Industrial Waste Conference. The luncheon will be held in the Purdue Memorial Union. If you plan to attend the luncheon and not attend the AEEP workshop on Monday, please contact Lee Christensen for reservations.

G. Lee Christensen  
Dept. of Environmental Engineering  
Cornell University  
Ithaca, NY 14853  
(607) 256-8505

### AEEP Distinguished Lecturer Series

Professor Donald MacKay of the Department of Chemical Engineering and Applied Chemistry, University of Toronto, was the AEEP Distinguished Lecturer for the 1982-83 academic year. Seventeen schools requested Dr. MacKay. The following were selected: Cal Tech, Carnegie-Mellon, Clemson, Cornell, Delaware, Minnesota, North Carolina, Purdue, Stanford, Tennessee, and Washington State.

## GENERAL NEWS

### Proposed Unified Biological Notation

A Working Group set up by the International Association on Water Pollution Research and Control (IAWPRC) and the International Union on Pure and Applied Chemistry (IUPAC) is seeking comments on a proposed notation for use in the description of biological wastewater treatment processes. The common system, recommended for dissemination of results in international journals, is described in *Water Research*, 16, 1501-1505 (1982). Send comments to A. Milburn, Secretary-Treasurer, International Association on Water Pollution Research and Control, Alliance House, 29/30 High Holborn, London WC1V 6BA, ENGLAND.

### AWWA Universities Forum

On Tuesday, June 7, the 12th Universities Forum will be held in conjunction with the annual meeting of the American Water Works Association in Las Vegas, Nevada. Fourteen student speakers representing universities across the country will present research papers dealing with various aspects of the field of water supply and treatment. The AWWA Academic Achievement Awards will also be presented as a portion of this program. Immediately following the afternoon Forum session, a reception will be held in the conference hall to provide an opportunity for student/faculty interaction.

Arrangements have been made to provide low-cost housing at two motels near the Las Vegas Convention Center. Reservations may be made directly with either the Desert Paradise or Desert Inn 500 by calling Toll Free 1-800-634-6635. Room rates are \$24.00 for single and \$29.00 for double. Hope to see you in Las Vegas!

### AWWA Academic Achievement Award Competition

The Academic Achievement Award Committee of the American Water Works Association is now accepting entries for the 1984 Academic Achievement Award competition. This award is intended to encourage academic excellence by recognizing contributions to the field of public water supply. All Master's theses and Doctoral dissertations that are relevant to the water supply industry are eligible. The thesis or dissertation must reflect the work of a single author, and be submitted for a degree between September 1, 1982, and

September 1, 1983. Entries must be postmarked by October 1, 1983, to be eligible for the 1984 award.

The best thesis and best dissertation will be awarded \$1,000 each, with second place awards of \$500 in both categories. In addition, distinctive commemorative plaques will be presented to winners and their academic advisors at the 1984 American Water Works Association's Annual Conference and Exposition in Dallas, Texas.

Official entry forms and information may be obtained by writing or calling the Academic Achievement Award Committee, American Water Works Association, 6666 W. Quincy Avenue, Denver, CO 80235, (303) 794-7711 ext. 78.

## SHORT COURSE AND SEMINAR ANNOUNCEMENTS

### Summer Continuing Education Program

A six-week continuing education program has been designed by the Lenox Institute for Research, Inc., to educate participants on the theories and practices of water quality control with special emphasis on flotation technology. Four courses are to be offered in Summer 1983:

- (a) Flotation and Related Adsorptive Bubble Separation Processes, July 11-13, or Aug. 1-3, fee \$250;
- (b) Design and Operation of Flotation Process, July 18-20, or Aug. 8-10, fee \$250;
- (c) Application of Flotation Process, July 25-27, or Aug. 15-17, fee \$250;
- (d) Research and Pilot Plant Operation, July 14-15, July 21-22, July 28-29, Aug. 4-5, Aug. 11-12, or Aug. 18-19, fee \$150 for each 2-day period.

Reduced fees for registrations in more than one course.

For more information, please contact:

Dr. Lawrence Wang, Manager & Professor  
Lenox Institute for Research, Inc.  
101 Yokun Avenue  
Lenox, MA 01240  
(413) 637-1681

### Short Course: Water Supply and Sanitation for Developing Countries

**Objectives** — During the UN Water Decade (1981-1990), many North American engineers and planners will be involved in increased activity in Water Supply and Sanitation in the developing countries. In this area there is a new concern to find the proper mix of low cost, renewable energy technologies together with the more conventional approaches. The present course, which will be an updated version of a Summer Course given in 1981, will review the emerging low cost, renewable energy technologies in the water supply/sanitation sector. Experience with these technologies will be presented by case histories. The role of operation and maintenance, project evaluation and the social, economic and cultural aspects of technology implementation in developing countries will also be stressed.

**Participants** — The course is directed to persons who plan to be actively involved in water resources and sanitary waste disposal project implementation in developing countries. Engineers and planners in consulting organizations with involvement overseas, as well as personnel in government organizations would benefit from this course. Trainers whose activities relate to overseas projects would also find this course useful.

This course will be held May 31-June 1, 1983, at the University of Ottawa, Ottawa, Canada. For further information, contact:

Mrs. Monique Marinier, Secretary  
Water and Sanitation Short Course  
Department of Civil Engineering  
University of Ottawa  
Ottawa, Ontario, CANADA K1N 9B4  
(613) 231-3432

### IAWPRC Seminars

The International Association on Water Pollution Research & Control announces four seminars in conjunction with its Biennial Conference in Amsterdam, 17-20 September 84. Contact IAWPRC, Alliance House, 29/30 High Holborn, London WC1V 6BA, ENGLAND, regarding the IAWPRC Biennial Conference itself.

*Degradation, Retention and Disposal of Pollutants in Groundwater* — 12-14 September 1984, Copenhagen, Denmark. Contact: Prof. E. Arvin, Technical University of Denmark, DK-2800, Lyngby, DENMARK.

*Biological Monitoring* — 15-16 September 1984, Cardiff, Wales, UK. Contact: D.H. Newsome, 7th Floor, Reading Bridge House, Reading, Berkshire, RG1 8PS, UNITED KINGDOM.

*Advanced Treatment Technologies for Removal and Disposal of Micropollutants* — 24-25 September 1984, Antwerp, Belgium. Abstracts are solicited. Contact: Ir. G. Bury, Secretary of Belgian National Committee of IAWPRC, Waterlooesteeweg 255-Bus 6, B-1000 Brussels, BELGIUM.

*Biological Phosphate Removal* — 24-25 September 1984, Netherlands. Contact: Ir. J.H. Rensink, Agricultural University (Biotchnion), De Dreijen 12, 6703 BC Wageningen, THE NETHERLANDS.

### Toxic and Hazardous Wastes

The 15th Mid-Atlantic Industrial Waste Conference will be held June 26, 27 and 28 at Bucknell University in Lewisburg, Pennsylvania. The theme of this year's conference will be control of Toxic and Hazardous Wastes. Sessions will include:

- RCRA Regulations
- Biological Treatment
- Regulatory Compliance
- Recycle/Reuse
- Heavy Metals Control
- Treatment, Storage & Disposal Facilities
- Hazardous Waste Management
- Hazardous Waste Incineration
- Treatment of Toxic Wastes
- Hazardous Waste Site Clean-Up
- Sludge Management
- Physical-Chemical Processes

For information on the conference, contact:

Dr. Michael LaGrega  
Department of Civil Engineering  
Bucknell University  
Lewisburg, Pennsylvania 17837  
(717) 524-1492 or (717) 524-1112

# ACADEMIC MARKETPLACE

**SCHOOL:** University of Massachusetts  
Department of Civil Engineering

**POSITION:** One or two Visiting Professors in the Environmental Engineering Program for the 1983-84 academic year.

**QUALIFICATIONS:** Ph.D. with expertise in any of the areas of Environmental Engineering.

**RESPONSIBILITIES:** Teaching, research, and graduate student advising.

**APPLICATION DEADLINE:** Open until the position is filled.

**CONTACT:** Dr. Clive L. Dym, Dept. Head  
Dept. of Civil Engineering  
University of Massachusetts  
Amherst, MA 01003

## WELCOME TO NEW AEEP MEMBERS

Dr. Edward J. Bouwer  
Civil Engineering Dept.  
Envir. Engineering Prog.  
Univ. of Houston  
Central Campus  
Houston, Texas 77004

Dr. Donald MacKay  
Chemical Engineering  
Univ. of Toronto  
Toronto, Ontario  
CANADA M5S 1A4  
(416) 978-4019

Dr. William J. Cooper  
Drinking Water Research Ctr.  
Florida International Univ.  
Miami, Florida 33199  
305-554-3049

Dr. Ronald C. Sims  
Civil & Environmental Eng.  
Utah State University  
Logan, Utah 84322  
(807) 750-3178

Dr. Hector R. Fuentes  
Metallurgical & Envir. Eng.  
New Mexico Institute  
of Mining & Technology  
Socorro, New Mexico 87801  
(505) 835-5129

Dr. T. Viraraghavan  
Faculty of Engineering  
Univ. of Regina  
Regina, Saskatchewan  
CANADA S4S 0A2  
(306) 584-4094

## THESIS AND DISSERTATION LISTING

The following list contains theses and dissertations completed during the 1981-82 academic year. This list was compiled by J. Jeffrey Peirce of Duke University upon submission by AEEP members.

The list is divided into nine major subject categories; each category is subdivided by schools. Each entry contains (in order) title, student's name, degree, and advisor's name. Some entries do not contain complete information.

### AIR POLLUTION

#### Carnegie Mellon University

Atmospheric Trace Elements in Glacier National Park; Thomas Mathison; M.S.

#### Clemson

Mobilization of Chromium from Steelmaking Baghouse Dust; Stephen F. Robinson.

Solution Rate of Acidity and Selected Ions from Ambient Aerosols; Michael E. Perry.

#### Florida

Effect of Acid Precipitation upon Soil Microbial Activity; Rae Ann Boylan; M.S.

Variations in Atmospheric Dispersion Results Due to Time Frame Averaging; John Daniel Marsh; M.S.

#### Illinois Institute of Technology

Statistical Analysis of Atmospheric Mixing Height Estimation Models; Ann Behnke, M.S.

Acid Waste Gas Biosulfurization: An Alternative to Chemical Sulfur Recovery Processes; Ruta Garunas; M.S.

A Study of Urban Aerosol Sampling Techniques and Size Distribution; Rancy Hastings, M.S.

#### Johns Hopkins University

Lead Fume Exposures to Welders in Ship Renovation; Alan Weikert; M.H.S.

#### University of Kansas

Evaluation of Airborne Contaminants Due to Emissions from a Continuous Extrusion Cooking Process; Robert W. Field, M.S.

#### University of Maine at Orono

Bioaerosols in Enclosed Industrial Environments; Michael K. Yavarow.

#### University of North Carolina, Chapel Hill

Combining EPA Air Quality Criteria Documents for Ozone, Hydrocarbons, and Oxides of Nitrogen; Jerry J. Andersen; M.S.E.E.

Nephelometer Estimates of Fine Particulate Mass Concentration in an Outdoor Smog Chamber; Richard V. Crume; M.S.E.E.

Neutralization and Size Changes of Sulfuric Acid Mist Particles in a Model; S. Thomas Dydek; Ph.D.

Mathematical Properties of Ozone-Precursor Relationships in Photochemical Mechanisms; Gregory A. Holton; Ph.D.

Sulfur Balance in Outdoor Smog Chambers and Resulting Implications for SO<sub>2</sub> Photo-oxidation Studies; Janet S. Meyer; Ph.D.

Control of Air Pollution from Aviation: Emission Standard Setting Process; Dennis F. Naugle; Ph.D.

#### University of Tennessee

An Evaluation of Downwash under Low Wind Speed Conditions; Milton A. Babb; M.S.

Thermal Decomposition of Sodium Bicarbonate and Its Effect on the Reaction of Sodium Bicarbonate and Sulfur Dioxide in a Simulated Flue Gas; Timothy C. Keener; Ph.D.

#### University of Washington

Data Analysis Methods for Understanding Background Air Quality; Don Caniparoli; M.S.

Humidity Affects on Atmospheric Aerosols: 1) The Aerodynamic and Optical Effects of Deliquescent Aerosols, 2) The Segregation of Aerosols on the Sizes of Cloud Nucleating Activity; Lee Harrison; Ph.D.

Laboratory Studies of (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> Aerosols Using Temperature and Humidity Controlled Nephelometry; Mark Rood; M.S.E.

#### Vanderbilt

Applications of Interactive Computer Graphics in Highway Noise Prediction Modeling; Leonard W. Casson; M.S.

#### Virginia Polytechnic Institute & State University

Airborne Measurements of Pollutants in the Sphere of Influence of the Radford Army Ammunition Plant; James D. Moore, III; X(CE); (Stephens).

Characterization and Analysis of the Ambient Aerosol Species in the Shenandoah National Park and Manassas, Virginia, Regions; Stuart Widom; X(ES); (Stephens).

## GROUNDWATER

### Auburn University

Organics Removal from a Synthetic Groundwater Using Powdered Activated Carbon and Alum-Polyelectrolyte Coagulation; William Stephen Spengler.

### Brigham Young University

Calibration and Application of HCMM Thermal Infrared Data to Location of Near Surface Water Table; Lee G. Baxter.

### University of Maine at Orono

Removal of Radon-222 from Domestic Groundwater Supplies; Jeffrey E. Brandow.

Numerical Modelling of Onsite Domestic Wastewater Disposal Systems for Design Optimization; James D. McMillan; M.S.; (Willem F. Brutsaert).

### Vanderbilt

Design of Efficient Groundwater Monitoring Networks; Eduardo A. Figueroa; Ph.D.

### Washington State University

Potential for Groundwater Contamination by Phenols & PAH Adsorbed onto Mt. St. Helens ash/sediments; Kathleen F. Siebenmann; M.S.; (Hindin).

## RIVERS, ESTUARIES & LAKES

### Auburn University

Determination of Carbonaceous and Nitrogenous BOD Removal Rates and Deoxygenation Rates Downstream from Highly Treated Municipal Effluents; Robert Donald McCaleb; M.S.; (Joe Miller Morgan).

### Brigham Young University

Evaluation of Relationships between HCMM Satellite Data and Utah Lake Water Quality Measurements; Marvin J. Harper).

### Clarkson

Effects of Anaerobic Conditions on Particulate Phosphorus Availability in Lower Great Lakes Tributaries; J.P. McAuliffe; M.S.; (Young).

Direct Filtration Studies of the Grosse River; S.J. Tambini; M.S.; (Edzwald).

Chemical Fractionation as an Indicator of Phosphorus Bioavailability in Suspended Solids from Tributaries to Lake Erie; W.R. Beckwith; M.S.; (Young).

Physical and Chemical Characterizations of Algal-Available Phosphorus in Suspended Sediments from Lower Great Lakes Tributaries; Ann Marie Victore; M.S.; (DePinto).

The Effects of Acid Lake Recovery by Chemical Manipulation on Algal Growth Potential; Robin L. Autenrieth; M.S.; (DePinto).

Ion Exchange Resins as Estimators of Algal-Available Sediment Phosphorus from Five Lower Great Lakes Tributaries; Michael K. Bollenbacher; M.S.; (Young).

Particle Size and Settling Velocity Analysis of Suspended Solids from Four Lake Erie Tributaries; Donald J. Kwolek; M.S.; (Young).

### Clemson

Stream Bed Sediment and Channel Morphology Response to Nonpoint Source Pollution Reduction in the Broadway Lake Watershed S.C.; Daniel H. Warren.

An Evaluation of Suspended Sediment Response to BMP Implementation in the Broadway Lake Watershed S.C.; B. Russell Ray.

Mercury Concentrations and Acid Precipitation Sensitivity of Western North Carolina and South Carolina Reservoirs; Melonie M. Sviatyla.

Water Quality Effects of Nonpoint Source Pollution Reduction: An Evaluation of the Broadway Lake Project; Allison D. Ranson.

An Analysis of Coarse and Fine Suspended Particle Movement during Elevated Streamflow Conditions in a Piedmont Watershed; Margaret E. Markey.

### Florida Institute of Technology

Nutrient Limitation Bioassays for Lake Washington (Florida) and the Upper St. John's River; Gerald W. Lappan; M.S.; (Belanger).

Primary Production Studies in the Upper St. John's River (Florida); Christopher J. Bove; M.S.; (Belanger).

Primary Production Studies in the Lake Washington (Florida); Russell D. Arnone; M.S.; (Belanger).

Benthic Macroinvertebrates, Biological Indicators, and Diversity Indices of the Upper St. John's River (Florida); (Belanger).

### Illinois Institute of Technology

Correlation of Copper Distribution in a Freshwater-Sediment System to Bioavailability; Diane Diks; M.S.

Copper Complexation and Stability Constants in Lake Water and Their Relationship to Productivity; Elsa Salazar; M.S.

### Iowa State University

Hydraulics of River Bed Degradation, Willow Creek, Iowa; Hergargholi Massoudi; Ph.D.; (Dougal-Baumann).

Management of a Gravel Pit Lake System to Optimize Future Water Quality; Larry Michael Antosch; Ph.D.; (Dougal).

### Montana State University

Organic Carbon Degradation in the East Gallatin River with Biofilm Kinetics; S. Srinanthakumar; Ph.D.; (Amirtharajah).

### New Mexico State University

Environmental Modeling of Chlorinated Organic Compounds in Rivers; Mary Elizabeth Beyer Clanton; M.S.C.E.; (Fernando Cadena C).

A Hydrologic Simulation Model for the Otowi-Cochiti Reach of the Rio Grande; Nancy Davis Gordon; M.S.C.E.; (George Sabol).

### Oregon State University

Estuarine Sediment Controls on Trace Metal Distributions; Robert James Davies-Colley; Ph.D.; (Peter O. Nelson).

### Ohio State University

Water Quality in the Ohio River Basin through Statistical Inference; Thomas Shaffer; M.S.

### Rensselaer Polytechnic Institute

Nutrient Budget for Lake Valencia; Jose Torres.

### South Dakota School of Mines & Technology

Water Quality Aspects of Urban Stormwater Runoff on a Portion of Rapid Creek; G.L. Magee.

Analysis of Urban Runoff from the Meade Street Drainage Basin; C.L. Nowak.

### Syracuse University

An Assessment of Mechanisms by Which Phosphorus May Be Regulated within the Sediments of Onondaga Lake, New York; Robert Honstein; M.S.

Vertical Phosphorus Transport in Onondaga Lake, New York; Martin C. Wodka; M.S.

### Texas Technological University

An Analysis of Water Quality on the Proposed Primary Contact Recreational Area on Canyon Lake II; B.L. Shelton.

### Tufts University

A 96-Hour Bioassay to Evaluate the Effects of the City of Laco-  
nia (NH) Landfill Leachate on Brook Trout (*Salvelinus fontinalis*, Mitchell); Timothy Walter Drew; M.S.; (N. Bruce Hanes).

## University of Arizona

Side Channel Reservoir for the Recovery of Natural Runoff in Southern Zambia; A.Z. Mumeke; M.S.

The Stable Channel as Shaped to Flow and Sediment; Elliot Silverston; Ph.D.

## University of Arkansas

An Annotated Bibliography of Beaver Reservoir; Richard A. Ashworth; M.S.

## University of Central Florida

Impacts of Alum Sludge on Lake Sediment Phosphorus Release and Benthic Communities; David B. Jellerson; M.S.; (Yousef).

Applied Steady-State and Transient Modeling of Mixing Zone Requirements in Streams; Alvin Castro, E.I.; M.S.; (Cooper).

Heavy Metals in Flood-Plains receiving Highway Bridge Runoff; Elizabeth T. Skene; M.S.; (Yousef).

## University of Florida

Distribution of Heavy Metals in Selected Florida Lake Sediments; Donald Michael Thompson; M.S.

Organic Chelators in Lake Okeechobee, Florida; Susan Weir Zoltewicz; M.S.

The Development of New Equations for the pH of Calcium Carbonate Saturation and Corrosion in Water Distribution; Rodolfo A. Psigan, Jr.; Ph.D.

Heavy Metal Complexation with Naturally Occuring Organic Ligands in Wetland Ecosystems; John Richard Tuschall; Ph.D.

Biological Nitrogen Fixation and Denitrification in Lake Okeechobee, Florida; Bruce Robert Snyder; M.S.

Diel Vertical Migration in a Subtropical Doline Lake; Scott Alan Russell; M.S.

The Plankton Communities of Selected Colored Lakes in North-Central Florida; Raymond W. Bienert, Jr.; M.S.

The Effect of Gizzard Shad *Dorosoma Cepedianum* (LeSueur) on Primary Production and Algal Composition in a Florida Lake; Helen Marie Kennedy; M.S.

## University of Iowa

Nitrogen Transformations in the Iowa and Cedar Rivers; Brandon J. Koltz; M.S.

Development of a Regional Steady State Stream Model for the Transport and Partitioning of Toxic Substances; Kirk Hatfield; M.S.

Fisheries and Limnology of Lake Panorama and Adjacent Middle Raccoon River, Iowa; Christopher D. Scarpellino; M.S.

Development and Field Validation of a Model for Predicting Long and Short Term Impacts of Acidic Deposition; William D. Palmer, Jr.; M.S.; (Schnoor).

## University of Kentucky

Effects of Stream Channel Improvement on Downstream Flooding—the Modified Kentucky Watershed Model; Ronald K. Gaynor; M.S.

## University of Maine

Classifying the Capability of Maine's Coastal Waters to Receive Wastewater Discharges; Bonny Lee Hadiaris; M.S.; (Brutsaert).

## University of Massachusetts

Evaluation Methodologies for the Flood Mitigation Potential of Inland Wetlands; Hisashi Ogawa; Ph.D.; (Male).

## University of Missouri

Ecological and Epidemiological Investigation of the Association between the Congenital Malformation Rate and the Use of Reservoir-Derived Water in a Midwestern Community; Michael D. Collins; Ph.D.

## University of New Hampshire

Water Quality Impact of Non-Point Source Contaminants in Small Tidal Rivers; Edward J. Schmidt; Ph.D.; (Bishop).

## University of Tennessee

Characterization of the Saturated Zone Associated with the Contour Surface Mining Spoil in the New River Basin of Tennessee; Paul S. Dickens; M.S.

## University of Washington

The Design Wave for Tripoli Harbor Northwest Breakwater; Salem M. Bailtelmat; M.S.C.E.

Manganese Chemistry in Lake Sammamish; Andrew Felmy; M.S.

Biomanipulation and Its Potential in the Restoration of Green Lake; Julie Goad; M.S.E.

Limited Fetch Spectral Models for Wind Waves at a Site on Elliott Bay; John Heavner; M.S.C.E.

Internal Loading and Sedimentation of Phosphorus in a Shallow Eutrophic Lake; Dennis Lynch; M.S.

The Environmental Impact Statement Process: A Case Study of the EIS for the Waste Water Management Plant for the Lake Washington/Green River Basins; Ketil Petterson; M.S.C.E.

Effects of Nutrient and Velocity upon Periphytic Algal Growth in Experimental Streams; Robert B. Veenstra; M.S.

Prerestoration Phytoplankton Dynamics in Pine Lake; Reginald Zisette; M.S.

## Vanderbilt

The Fate of Toxic Substances in Rivers; Peter R. Jaffe; Ph.D.

## Virginia Polytechnic Institute

The Influence of Algal Growth and Related Ecological Factors in Reservoirs on the Production and Control of Trihalomethane Precursors; Kevin Dixon; (Hoehn).

Assemblage Characteristics and Sampling Consideration for Aquatic Macroinvertebrates Inhabiting a Lower Mississippi River Stone Dike; David B. Mathis; (Boardman).

## Washington State University

The Effect of a Floating Breakwater on Thermal Stratification in an Embayment; Douglas Engle; M.S.; (Johnstone).

Phytoplankton Production and Regulating Factors in Liberty Lake, Washington, with Possible Implications of Restoration Activities; Harry L. Gibbons; Ph.D.; (Funk).

The Effects of Cadmium, Nickel and Zinc upon the Yield of *Ankistrodesmus Falcatus* and *Anabaena Flos-Aquae*; Barry J. LiMarzi; M.S.; (Funk).

The Reponse of the Liberty Lake Restoration Efforts and the Ashfall from the Eruption of Mt. St. Helens; Ralph Nelson; M.S.; (Funk).

A Comparison of Attached Algal Communities on Natural and Artificial Substrates in the Upper Spokane River; Terri H. Notestine; M.S.; (Funk).

## University of Wisconsin-Milwaukee

PCBs in Dated Sediment Cores from Milwaukee Harbor; C.K. Lo.

## SOLID WASTES

### Duke University

Large Continuous Calorimeter for Refuse Derived Fuels; Mike Oh; M.S.

Effect of Feed Composition on Air Classified Performance; Jeff Taub; M.S.

Standards for Densified Refuse Derived Fuels; Jody Eimers; M.S.

Pulsed Air Classifiers; Rich Stessel; M.S.

Behavior of Glass and Paper in Air Classifier; Cary Saul; M.S.

Effect of Inorganic Hazardous Wastes on Clay Liner Performance; Mike Coia; M.S.

## Iowa State University

Factors Affecting the Extraction of Semi-volatile Organic Priority Pollutants from Solid Samples; Elizabeth Harrold; M.S.; (Young).

Recycle and Disposal of Wastewater from Anaerobic Digestion of Municipal Solid Waste; Susan Blount Stefoni; M.S.; (Young).

Engineering Report on Environmental Control Technology for Modular Combustion Units Designed to Convert Municipal Solid Waste to Energy; Thomas Edward Wessels; M.S.; (Young).

## Johns Hopkins University

Aspergillus Fumigatus in Compost; Merrylin Zaw-Mon; M.H.S.

The Feasibility of Source Separation as the First Step for a Municipal Solid Waste Disposal Scheme; Charles W. Fiedler; M.S.

## Texas Technological University

A Guide to Environmental Impact Analysis of Alternative Biomass Conversion Processes; D.C. Rutherford.

## University of Toronto

Dynamics of Nitrification in a Biological Fluidized Bed Reactor; S.W. Hermanowicz; Ph.D.; (Ganczarzyk).

## WATER & WASTEWATER TREATMENT

### Arizona State University

Biological Removal of Nitrogen from Waste Water; Chester M. Morton.

### California State University

Solids Removal Chlorine Contact Basin Wastewater Treatment Facility; Mike Thalhamer

Hydrodynamics of Store Lagoon; Larry Bowermarters.

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Emulsified Oil Destabilization by Organic Electrolyte Flocculation; James A. Cook; M.S.

Estimation of Calcium Carbonate Scaling Tendency in Blast Furnace Recycle Water; Deborah Lange-Kennedy; M.S.

### Clarkson

The Removal of Organics from an Upland Reservoir by Direct Filtration and Conventional Treatment; C. A. McGowan; M.S.; (Edzward).

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### Drexel

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## Illinois Institute of Technology

Temperature Effects on the Start-up of High SRT Anaerobic Process; Joe Gorgan; M.S.

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Evaluation of the Las Cruces Sewage Treatment Facility; Arin Mornelli Sylvana, MSCE; (Cadena C. Fernando).

Investigation of the Potential Problems Associated with the Use and Reuse of the NMSU Geothermal Water; Fe Padilla-Wunsch, MSCA; (Cadena C. Fernando).

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Recovery of Water and Wastewater Treatment Chemical from Fly Ash; Janet S. Condra.

Fate of Heavy Metals During Aerobic Digestion; James D. Barksdale.

## Ohio State University

Projections of Water Usage and Demand in Columbus, Ohio: Implications for Demand Projections; Michael Schneider.

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## Rensselaer Polytechnic Institute

Prediction of Preferential Selectivity for Activated Carbon Adsorption of Trace (Homolog) Contaminants Using the Simplified Version of the Solvophobic Theory and High Pressure Liquid Chromatography as a Predictive Measure of Adsorption of Polynuclear Aromatic Hydrocarbons to Activated Carbon; Charles P. Ferrick, Jr.; M.S.

Morphology and Temperature Effects in Treating Sulphuric Acid Casein Whey with Three Ultrafiltration Membranes; Barnes Reed Bierck; M.S.

Convective Polarizing Fields to Remove Solutes From a Flowing Stream; Pei Cheng Chin; M.S.

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Ozonation of A Municipal Surface Water Supply to Reduce Odor and Enhance Flocculation; David Nusz; M.S.

Estimated Treatment of a Trench System for Leachate from the Brookings Sanitary Landfill; Wahyono Hadi; M.S.

## Stanford

Trace Contaminant Volatilization in Packed Columns with Two-Phase, Countercurrent Flow; Arturo Riojas; M.S.

Transfer of Volatile Organic Pollutants into a Gas Phase During Bubble Aeration; Christoph Munz; M.S.

## Syracuse University

Tannery Wastewater Treatment by RBC with and without Anaerobic Pretreatment; George B. Rest; M.S.

## Texas A & M University

Organic Removal from Domestic Waste Water by Activated Alumina Adsorption; Pe-der Yang; M.S.

## Texas Technical University

Effects of Temperature on Selected Unit Activities of Conventional Water Treatment; R. D. Bowersock; Ph.D.

Use of Water Hyacinths for Treatment of Water; Brian Rowe.

## Tufts University

A Comparison of Loss Control Systems for a Pulp Mill; Kim Lawton McCoy; M.S.

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## University of Akron

Modeling of Pump Station Design; K. E. Mehrfer; M.S.

Modeling of Urban Stormwater Systems; J. F. Schniegenberg; M.S.

## University of Arizona

Chemical Coagulation of Steam Flooding Tar Sand Processing Wastewaters; Mehmet O. Akad; M.S.

## University of Arkansas

Onsite Household Wastewater Treatment of Disposal by Lawn Sprinkling; Billy P. Scherer; Ph.D.

Treatability and Fate of Soluble Copper in Trickling Filter Systems; Thad L. Luther; M.S.

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On-Site Excreta Treatment and Disposal; Godfrey E. Igbokwe; M.S.; (Yousef).

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Trihalomethane Precursor Removal Using Magnesium Coagulation; Christianne C. Ferraro; M.S.; (Taylor).

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The Adsorption Characteristics of Pb(II) at the Solid-Solution Interface Effect of Complex Formation; Yi-Tim Wang; M.S.

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Removal of Arsenic from Water by Adsorption onto Activated Alumina; Eric Rosenblum; M.S.; (Clifford).

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Regeneration of Strong Base Anion Exchange Resins Used for Nitrate Removal; Don W. Swaites; M.S.

Gas Stripping of Volatile Organics in Water; Robert L. Mumford; M.S.

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## University of Kentucky

Development of an Inertial Separator for Slurries and Wastewater; Gregory N. Jones; M.S.

## University of Maine

Relationship Between Soil Moisture Content and Phosphorus Movement in Leachates from Domestic Waste Disposal Systems; Peter A. Foster.

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Treatability of Coal Gasification Wastewater Using Powdered Activated Carbon - Activated Sludge Process; Joseph Janeczek; MSEE.

Development of Seasonal Wasteload Allocations for the Durham Northside Wastewater Treatment Plant; Joe S. Kowalczyk; MSEE.

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Process Variability During Treatment of a Coal Conversion Wastewater and Implications Design; Brian R. Marshall; MSEE.

Treatment Modifications for Limiting Trihalomethane Production in Wilmington, N.C. Drinking Water; Glenn M. Palen; MSEE.

Solvent Extraction of Coal Conversion Wastewater and Its Impact on Biological Treatability; Wen-Long Shu; MSEE.

## University of Notre Dame

Attachment and Growth Characteristics of *Thiobacillus ferrooxidans* in the Biological Treatment of Acid Mine Drainage; Jayne O'Brien Kebe; M.S.

Pilot Plant Investigation of Sequencing Batch Reactors; Lawrence Burke; M.S.

## University of South Carolina

The Incidence and Impact of Fluoride in Drinking Waters on the Isle of Palms and Sullivans Island South Carolina; David E. Wilson; M.S.

The Simulation of Water Treatment Unit Operations to Assess the Impact of the National Primary Drinking Water Standards on Water Treatment Plant Design; Debra J. Moors; M.S.

Interactive Computer Design of Wastewater Treatment Plants; William E. Vaughan; M.S.

## University of Toronto

Pilot Study of Leachate Treatment by Anaerobic Filter; J. Scarcello; M.A.Sc.

Treatment of Landfill Leachate by the Anaerobic Filter; R. Sidhwa; M.A.Sc.

Nitrogen Removal From the Effluent of an Anaerobic Filter Treating Leachate; P. Elefsiniotis; M.A.Sc.

Anaerobic Filter Treatment of Human Waste in Northern Communities; S. Pyke; M.A.Sc.

Technological and Economical Analysis of Physical Pretreatment Variants for Coke Plant Effluents; M. Kelleher; M.Eng.

Dynamics of Nitrification in a Biological Fluidized Bed Reactor; S. Hermahowicz; Ph.D.

Detoxification of Concentrated Cyanide Solutions by Polysulphide Addition; P. Takaoka; M.Eng.

## University of Washington

Treatability of Recreational Vehicle Wastewater at Highway Rest Areas; Charles A. Brown; MSE.

Water Resources System Reliability Under Drought Conditions: The Seattle Water Supply System as a Case Study; Sarah Draper; MSCE.

Limiting Factors in the Anaerobic Treatment of Sulfite Evaporator Condensate; Brian J. Eis; MSCE.

An Interactive Simulation Model for the Cedar/Tolt Water Supply Systems; Karol Erickson; MSE.

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## University of Wisconsin-Milwaukee

Oxygen Uptake Rate for Activated Sludge Process Evaluation; C.Y. Chen.

## University of Wyoming

Evapotranspiration - A Wastewater Treatment Process; Barry R. Venn; M.S.

## Utah State University

Testing of Models for the Design of Wastewater Stabilization Ponds; Lee Blummel.

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Refinement of Design Parameters for the Clarification of Oxidation Ditch Mixed Liquor; Eric Stewart.

Catalytic Oxidation of Sulfur Dioxide in Wastewater, Ernest J. Upton.

## Vanderbilt

Development and Application of a Mathematical Model for Rapid-Mixing to Reactor-Clarifier Modeling; Richard M. Strang; Ph.D.

Single Stage vs Multi Stage Aerobic Digestion Kinetics; Obima E. Nkpa; M.S.

## **Villanova**

Lime Stabilization Effectiveness of Two Process Modifications; Patricia A. Westphal; M.S.; (Christensen).

## **Virginia Polytechnic Institute & S. University**

The Fate of Applied Nitrogen in the Soil and Phytotoxicity considerations in Nylon Wastewater Irrigation; John W. Donley; (Boardman).

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Reservoir Sediment Exchange of Phosphate, Ammonia, and Metals under Anaerobic and Aerobic Conditions; Stephen G. McLaughlin; (Grizzard).

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## **Washington State University**

Adsorption of Chlorinated Methanes from Aqueous Solution on Selected Plastic Adsorbents; Freeman C. Cook; M.S.; (Hartz).

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## **INSTRUMENTAL METHODS OF ANALYSIS**

### **Brigham Young University**

Spherical Concrete Water Tank Design; Steven James Hoggan. Some Applications of Computer Graphics to Water Resources Engineering; Ray J. Meyers.

## **Illinois Institute of Technology**

A Review of Hiway-2 and Caline-3 and A Comparison of the Precision and Accuracy of the Concentration Predictions; David Sloat; M.S.

## **Iowa State University**

Scanning Electron Microscope Evaluation of Particle Deposition in Deep Bed Filters; Russell Dean Stammer; M.S.; (Baumann).

## **Michigan Technological University**

A Mathematical Model of a Wet Oxidation System; L.C. Regenmorte; M.S.; (Baillad).

## **Rensselaer Polytechnic Institute**

Computer Simulating of Throughfall: A Deterministic Model to Simulate Transport of Acid Deposition to a Forested Watershed; C. Vasudevan; Ph.D.

Enterovirus Concentration by Automated Hollow Fiber Ultrafiltration System; Anne Mary Paluszek; M.S.

## **University of Arizona**

Wells Imaged about an Interface: A Mathematical Model; Eiji Fukumori; M.S.

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## **University of Florida**

Radiographic Performance Characteristics of an Automatic Exposure Control Device-The Philips Amplimat Ion Chamber System; Carl Anthony Tarantino; M.S.

## **University of Toronto**

Modelling Residuals in the Environment: An Example Using Copper; R. Paine; M.A.Sc.

## **Vanderbilt**

A Comparative Analysis of Carbamate Toxicity Using the Warburg Respirometer and the Acute Plane Assay; Charles E. Edmiston, Jr.; Ph.D.

Evaluation of the Bed-Depth-Service-Time Method for Designing Carbon Adsorption Systems; Harold E. Schmidt; M.S.

## **Washington State University**

Analysis of Organics by High Pressure Liquid Chromatography; See Hoi Wong; M.S.; (Hindin).

## **University of Wisconsin-Milwaukee**

A Spectrophotometric Determination of Total Trihalomethanes in Finished Waters; (Smith).

## **LAND TREATMENT**

### **Clemson**

Removal of Organic Carbon and Nitrogen Compounds by Overland Flow Treatment; Raymond L. Evans.

Pasture Runoff Water Quality from Application of Ammonium Nitrate, Dairy Manure, Poultry Manure, and Municipal Sludge; Richard V. McLeod.

### **Michigan Technological University**

Soil Adsorption of Chlorinated Organics: Effects of Clay and Organic Content of Soil; L.J. Londo; M.S.; (Hutzler).

### **Texas Technological University**

The Influence of Evapotranspiration Rates and Cropping Sequences in Sizing Large Scale Land Application System; D.R. Gregory; M.S.

### **University of Massachusetts**

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## University of South Carolina

An Evaluation of Land Application as a Sludge Disposal Technique in Coastal South Carolina.

## SLUDGE MANAGEMENT

### Auburn University

An Investigation of the Fate of Phosphorus during the Aerobic Digestion of Lime-Primary Sludges; Jerry Lynn Aycock.

The Mechanism of Phosphorus Removal in the Activated Sludge Process; Jia-Chyi Lan.

### Howard University

The Recovery of Black Liquor from Gypsum Sludge; Victor E. Anyamele.

### Illinois Institute of Technology

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### Ohio State University

Anaerobic Rotating Biological Contactor for Sewage Sludge Stabilization; Wai Hong Phoon; Ph.D.

### Oregon State University

The Effects of Dissolved Oxygen Concentration on the Activated Sludge Process; G.R. Swanson; Ph.D.

### University of Alberta

Role of Speciation in Metal Removal by Activated Sludge; Jeppe S. Nielsen; Ph.D.; (Hrudey).

### University of Arkansas

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The Stabilization of Wastewater Treatment Sludges; John R. Lodderhose; M.S.

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### University of Notre Dame

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### Vanderbilt

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The Use of Triphenyltetrazolium Chloride as a Measure of Sludge Activity; R. Scott Heflinger; M.S.

## MISCELLANEOUS

### Arizona State University

Algae Bioassays for Water Quality Assessment; Robert Hollander; M.S.

Water Resources Aspects of Coal Fired Power Plant Siting; Frank T. Darmiento; M.S.

### Carnegie Mellon University

Relationships between Environmental Lead Exposure and Blood Lead Levels in Pre-School Children in Metropolitan Pittsburgh; Nancy Philippart; M.S.

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### Clemson

Evaluating the Water Quality Effectiveness of Agricultural Nonpoint Source Pollution Control Measures: Phosphorus-Suspended Sediment Transport Relationships; James B. Atkins.

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### Drexel University

The Binding of Nonpolar Organic Compounds to Dissolved Humic Materials; Charles W. Carter; Ph.D.

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Multifactor Analysis of Occupational Dermatitis among Hairdressers; Geraldine Knowles Stovall; Ph.D.

The Effects of Cyanide and Chloroform Toxicity on Methane Fermentation; Chia-Hwa Yang; Ph.D.

Specific Organic Removals and the Significance of Competitive Adsorption in the Treatment of Drinking Waters by Granulated Activated Carbon; Thomas Lester Yohe; Ph.D.

### Florida Institute of Technology

Degradation of Ethion in Water and Sediment from a Citrus Grove Irrigation Canal in Florida; Richard J. Pfeuffer; M.S.; (Dierberg).

Land Use and Water Quality Relationships in the Crane Creek Watershed (Brevard County, Florida); Jay D. Perlestein; M.S.; (Belanger).

Methane Production in a Sludge Blanket Anaerobic Digester; Pratib Wongviboonsin; M.S.; (Jennings).

### Howard University

The Technical and Economic Feasibility of In-Line Storage of Combined Sewer Overflows; Sadia Kissoon.

### Illinois Institute of Technology

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Co-Removal of Cadmium with Ferric Hydroxide; Pablo Go; M.S.

Downwash Dispersion Modeling; Kathleen Leikert; M.S.

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### Iowa State University

Hydraulic Characteristics of Trapezoidal Drop Structures; Robert Sidney Carr; M.S.; (Dougal).

Use of the Surrogate Worth Tradeoff Method as a Water Resources Planning Tool; Gregory Clites; M.S.; (Austin).

Remote Sensing of Changes in Land Resources: Application of LANDSAT Satellite Imagery; Johanshir Golchin; Ph.D.; (Austin).

The Availability of Water in Iowa for Economic Modeling Purposes; Thomas Moore; M.S.; (Dougal).

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Bill Christensen; Ph.D.

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Cadmium Toxicity in Rats, Renal Tubular Involvement; Sue  
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Health Considerations Associated with Recycle/Reuse of  
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Collection Efficiency of Open Personal and Area Samples;  
Paul Nevins; M.H.S.

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## Kansas

Source Adequacy Methods for Public Supplies in Kansas; T.R.  
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