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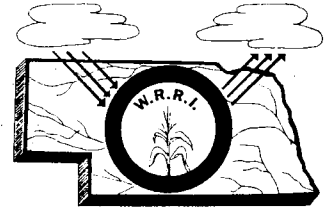
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WATER RESOURCES NEWS

NEBRASKA WATER RESOURCES RESEARCH INSTITUTE
212 AGRICULTURAL ENGINEERING BUILDING

THE UNIVERSITY OF NEBRASKA
LINCOLN, NEBRASKA 68503



Volume 2 Number 8

September 1970

WASTE WATER REUSE

The cost and feasibility of reusing municipal waste waters is under study in five Texas cities, according to Secretary of the Interior Walter J. Hickel.

Cities involved in the study are Corpus Christi, El Paso, Midland, San Angelo and San Antonio.

Secretary Hickel said the study is being made by the Southwest Research Institute of San Antonio and Houston, Texas, under the supervision of the Texas Water Development Board and with the technical assistance of the Office of Saline Water and Federal Water Quality Administration.

The study will develop a comparative cost analysis of facilities, processes and the treatment of waste water to acceptable standards for municipal and industrial reuse. Both desalting and advanced waste treatment processes will be considered as a means of achieving the reuse quality goal.

In addition, the study will develop a simplified procedure for establishing the cost of waste water purification for reuse in any city in the United States. This will serve as an excellent tool for those cities having water supplies too limited to insure meeting their increasing needs on a once-used basis.

ACTION ON MERCURY POLLUTION

Interior Secretary Walter J. Hickel has announced that his department is "moving aggressively to identify and eliminate industrial discharges of mercury pollutants into the nation's waterways."

In telegrams to governors of seventeen states in which mercury pollution is suspected, Secretary Hickel pledged full support of the department's water quality monitoring expertise and legislative authority. Hickel urged the governors to act vigorously in eliminating known discharges of the metal.

In his statement the Secretary said, "The Administration is developing hard evidence and will seek court action in any confirmed case of mercury pollution if corrective measures are not taken swiftly on local levels."

The Secretary's declaration follows reports from the Federal Water Quality Administration which reveal that abnormal mercury concentrations have been found in waste water in major waterways in the South, Southwest, Northeast and Midwest areas of the nation.

IMPROVING WASTE TREATMENT

A \$1-1/4 million grant has been awarded to New York City by the

Interior Department to demonstrate the effectiveness and cost of substituting oxygen for air in the activated sludge treatment process. The project will be carried out at the Newtown Creek Plant where operation of the 310 m.g.d. facility must be upgraded to meet federal-state water quality standards. Higher concentrations of dissolved oxygen can be maintained in the treatment process by using pure oxygen, therefore stepping up the efficiency.

has been prepared by the Department of the Interior and is now available at no cost on request to the Middle Atlantic Regional Office, FWQA/USDI, 918 Emmet Street, Charlottesville, Virginia 22901.

It contains a list of available teaching aids and brief descriptions and definitions of pollution and waste treatment processes which will be useful to any layman interested in water pollution control.

WESTWIDE WATER RESOURCES STUDY

In August, Secretary of the Interior Walter J. Hickel announced an outline for the Western United States Water Plan Study. The outline was sent to the governors of the 11 involved states and others interested as the initial step toward preparation of a detailed plan of study. James R. Smith, Assistant Secretary of the Interior for Water and Power, said that the study affords the West the greatest opportunity it has ever had to present to Congress the complete picture of western water needs.

The study outline lists nine immediate steps to be taken to implement the first phase and seven basic principles which will underlie the study. The study plan will be dynamic and evolve as studies progress, with provisions for continuing review and modification in response to study findings and the changing needs of the Western states.

POLLUTION GUIDE FOR SCOUT LEADERS

A booklet on Water Pollution and Its Control for Boy Scout Leaders

WATER POLLUTION CONTROL NEED \$33-37 BILLION

Senator Edmund S. Muskie, Chairman of the Senate Subcommittee on Air and Water Pollution, has released a report estimating the nation's water pollution control needs for the next six years at \$33-37 billion.

The report strongly urged approval of a federal funding program of at least \$2.5 billion a year for the construction of municipal facilities. It added that "a \$3 to \$4 billion a year Federal program can be easily justified in light of present needs."

The report was prepared by the National League of cities and the United States Conference of Mayors at Senator Muskie's request. He had asked for hard figures during water pollution hearings held in May.

Muskie is chief sponsor of S.3687, pending before the Subcommittee, to authorize a Federal program of \$2 billion a year for five years. The funds would become the Federal share of \$25 billion worth of municipal facilities.

CLEANING NATION'S WATERWAYS

Secretary of the Interior Walter J. Hickel recently announced the release of the first annual report of the Federal Water Quality Administration, which gauges the progress being made in cleaning up the nation's waterways. This report was undertaken at Hickel's direction so that a better assessment of the effectiveness of the water pollution control efforts could be made in order to improve the program. The report points out that while \$1.5 billion in federal grants has been awarded to aid in the construction of \$6.4 billion worth of municipal treatment facilities, treatment has not kept pace with developments. Copies of this report may be obtained by writing the Public Information Office, Federal Water Quality Administration, Washington, D.C. 20242.

UNDER WATER POWER PLANTS

A grant has been awarded to General Dynamics, by the Interior Department to study underwater power plants in the oceans. This may be the answer to the need to boost power supplies without overheating inland bodies of water.

Several 1000 megawatt, nuclear-powered generating stations will be placed on the sea floor at depths of 250 feet. These may be placed as far as 25 miles from the shore.

The concept behind the proposal is based on the fact that the cold ocean waters can more readily absorb the large quantities of waste heat from power plants than inland bodies of water.

At least three sites will be evaluated, one in a temperate zone, one in northerly waters and one in semi-tropical waters.

WANTED - CATALOG OF PRODUCTS WHICH ARE POTENTIAL WATERS POLLUTERS

The Department of Interiors' Federal Water Quality Administration needs a catalog listing of all finished products which may be discharged to surface waters, estuaries, or the oceans.

Organizations interested in submitting their qualifications should send not more than ten typewritten pages of information, excluding brochures and general information.

Sources that are determined to be most qualified will be invited to submit proposals when and if request for proposal forms are issued.

Information should be sent to the Department of the Interior, Federal Water Quality Administration, 1921 Jefferson Davis Highway, Crystal Mall Building, No. 2, Room 700, Arlington, Virginia 22202.

F.W.Q.A. WASTEWATER TECHNOLOGY STUDY

FWQA is sponsoring a study of a two year post high school Wastewater Technology Program to train wastewater treatment plant operators. Anyone who would like to have input to this effort may send his comments to John Austin at Clemson University, as he is serving on the study group.

PROPOSAL DEADLINES

Matching grant proposals for consideration for funding in the 1972 program of the Nebraska Water Resources Research Institute must be submitted to the Institute Director by October 15, 1970. Basic Allotment Proposals are due on December 1, 1970. Prospective researchers are advised to consult with the Director before preparing formal proposals. Contact: Dr. Warren Viessman, 212 Ag. Eng., East Campus, University of Nebraska, Lincoln, Nebraska 68503.

UNIVERSITY OF ILLINOIS ANNUAL WATER QUALITY CONFERENCE

The Thirteenth Water Quality Conference will be held in Urbana, Illinois on February 15 and 16, 1971 under the title of Virus and Water Quality: Occurrence and Control. This conference is planned for engineers and scientists in education, government, industry and private practice, and for water and wastewater works managers and operators. Further information may be obtained from V. L. Snoeyink, Assistant Professor of Sanitary Engineering, 3230 Civil Engineering Building, University of Illinois, Urbana, Illinois 61801.

RESEARCH REVIEW

Project Title: "Concurrent Growth of Bacteria and Algae in a Closed Vessel"

Principal Investigator: Dr. Peter J. Reilly

Dates: July 1970 to June 1973

One of the most challenging water quality problems facing man relates to the over-enrichment of natural waters by nitrates and phosphates. Various aspects of eutrophication are under study. An important consideration which has largely been neglected, however, is that of the interactions between various microbial species in eutrophic waters. This study is designed to evaluate the concurrent growth of bacterial and algal species. Effective control of eutrophication will be possible only when we have a complete understanding of the physical and biological systems composing the environment in which algae are produced. This research should provide a better understanding of these biological systems and hopefully lead towards measures which may be effectively used to control this significant water quality problem. The research proposed is of regional and national significance.

NEW PUBLICATIONS RECEIVED BY INSTITUTE - SEPTEMBER

1. "Survey of Water Utilization and Waste Control Practices in the Southern Pulp and Paper Industry", P. J. Kleppe, C. N. Rogers, University of North Carolina, June 1970.
2. "The Relative Significance of Phosphorus and Nitrogen As Algal Nutrients", C. M. Weiss, University of North Carolina, June 1970.
3. "Factors Affecting the Transfer of Materials Between Water and Sediments", Dr. F. Lee,

- University of Wisconsin, July 1970.
5. "Water-Resources Manpower Supply and Demand Patterns to 1980", J. E. Lewis, Louisiana State University, May 1970.
 6. "Human Factors Involved in the Development of A Watershed In Yabucoa," F. del Rio, J. Collazo, A. T. Berrios, N. Lopez, University of Puerto Rico, July 1970.
 7. "Annual Report of Activities During Fiscal Year 1970", University of Maine, Annual Report No. 6, July 1970.
 8. "Anaerobic Lagoon Treatment of Packinghouse Wastewater", M. J. Hammer, C. D. Jacobson, University of Nebraska, June 1970.
 9. "Study of Pharmaceutical Manufacturing Wastewater Characteristics and Aerated Treatment System", D. R. Andersen, M. J. Hammer, J. G. Obrist, L. E. Daniels, C. D. Turner, University of Nebraska, May 1970.
 10. "Biochemical Oxygen Demand Determination of Industrial Wastewaters", M. J. Hammer, University of Nebraska, August 1970.
 11. "Annual Report Fiscal Year 1969-1970", Rutgers University, July 1970.
 12. "An Approximate Method For Determining the Hydraulic Conductivity Function of Unsaturated Soil", R. W. Skaggs, E. J. Monke, L. F. Huggins, Purdue University, June 1970.
 13. "Proceedings Workshop on Mosquito Control in North Carolina", North Carolina State University, Report No. 36, May 4, 1970.
 14. "An Experimental Study of the Uptake of Water by Soybean Roots", Arnold Klute, University of Illinois, January 1970.
 15. "Boundary Effects on Jet Flow Patterns Related to Water Quality and Pollution Problems", W. Hall, C. Maxwell, H. Pazwash, University of Illinois, January 1970.
 16. "Stochastic Analysis of Hydrologic Systems", V. Te Chow, University of Illinois, December 1969.
 17. "Studies on the Population Dynamics and Physiological Ecology of Four Species of Fresh-Water Isopods", A.J. Seidenberg, University of Illinois, January 1970.
 18. "Books, Publications, Project Completion Reports, M.S. and Ph.D. Theses", Iowa State University, June 30, 1970.
 19. "Oil Tagging System Study", Water Pollution Control Administration, May 1970.
 20. "Economic and Technical Aspects of the Use of Mathematical Models in State Water Resources Planning Programs", Warren Viessman, Jr., Publication No. 3, University of Nebraska, September 1970.
 21. "Proceedings -- Hydrology Seminar -- Present Hydrologic Research in Wyoming and Future Needs", University of Wyoming, June 1970.
 22. "Sixth Annual Report", University of Wyoming, July 15, 1970.
 23. "Consumptive Use of Irrigation Water In Wyoming", F. J. Trelease, P. A. Rechar, T. J. Swartz, R. D. Burman, University of Wyoming, July 1970.
 24. "Evaluation Process in Water Resources Planning", W. Whipple, Jr., E. A. Engelbert, W. L. Trock, American Water Resources Association, July 1970.
 25. "Annual Report of the Arkansas Water Resources Research Center for FY 1969", University of Arkansas, July 1969.
 26. "Annual Report of the Arkansas Water Resources Research Center for FY 1970", University of Arkansas, July 1970.
 27. "Investigation of the Use of High Purity Oxygen Aeration in the Conventional Activated Sludge Process", J. G. Albertsson, J. R. McWhirter, E. K. Robinson, N. P. Vahldieck, Federal Water Quality Administration, May 1970.

28. "Scheduling of Pallet Trucks in Pulpwood Operations", T. J. Corcoran, University of Maine, February 1964.

29. "Behavior of Annual Floods in Limestone Basins in Pennsylvania", E. L. White, B. M. Reich, Pennsylvania State University, 1970.

30. "Outdoor Recreation for Nebraska", State of Nebraska, Nebraska Game and Parks Commission, 1969.

31. "The Economic Value of Natural Areas for Recreational Hunting", K. G. Holbrook, University of Kentucky, 1970.

32. "A Methodology Study to Develop Evaluation Criteria For Wild and Scenic Rivers", F. J. Watts, University of Idaho, September 1970.

33. "Patterns of Politics in Water Resource Development: A Case Study of New Mexico's Role in the Colorado River Basin Bill", H. M. Ingram, University of New Mexico, December 1969.

34. "Irrigation Water Requirements for Crop Production, Roswell Artesian Basin, New Mexico", New Mexico State University, November 1969.

35. "Proceedings Annual Water Conference", New Mexico State University, March 12-13, 1970.

36. "Sixth Annual Report", New Mexico State University, FY July 1, 1969 - June 30, 1970.

37. "Electrophoretic Clarification of Water", E. A. Hiler, W. M. Lyle, Texas A & M University, August 1970.

38. "Application of Specialized Optimization Techniques in Water Quantity and Quality Management With Respect to Planning for the Trinity River Basin", W. L. Meier, Jr., C. S. Shih, Texas A & M University, July 1970.

NEWSLETTER ITEMS

Newsletter items and inquiries should be sent to: Dr. Warren Viessman, Jr., Director, N.W.R.R.I., 212 Agricultural Engineering Building, East Campus, Lincoln, Nebraska 68503.