

# the divining rod

New Mexico Water Resources Research Institute

80-3

Fall 1980

## Clyde Wilson Dies at Age 48

Clyde Wilson, U.S. Geological Survey hydrologist at Las Cruces, New Mexico, died Saturday, October 11, 1980, while on a family hunting trip. He had been chief of the Las Cruces field office since 1971.

Clyde was born in Morenci, Arizona, in 1932. After graduating from Carlsbad High School in 1950,

he first attended New Mexico School of Mines, Socorro, N.M. He then enlisted in the Air Force and received his commission and wings in March, 1954. Wilson served as a navigator-bombardier in Korea, and Air Force police officer at Hurlburt Field, Florida, until

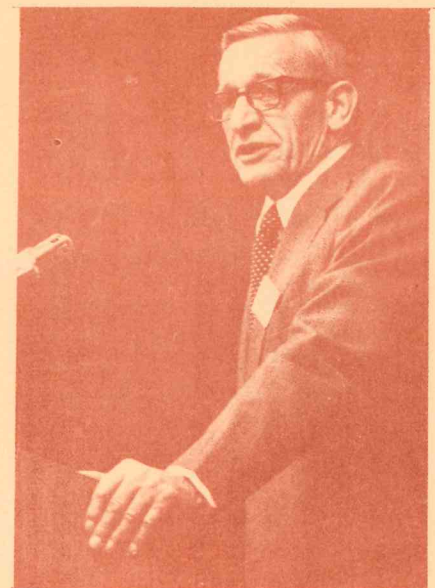
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## Lecture Series Honors the Late John Clark

The John Clark Lecture Series, which began this fall with an address by Dr. Bruce Tschantz, federal dam safety director, honors the late Professor John Clark, an internationally known water resources expert and sanitary engineer. Clark was instrumental in founding NMSU's Water Resources Research Institute and in establishing the doctoral program in engineering at NMSU.

Other lecturers this year have been: Frederick L. Hotes, irrigation advisor with the Agriculture and Rural Development Department of the World Bank; Dr. Walter J. O'Brien, consulting engineer with Black and Veatch of Dallas, Texas (and John Clark's first doctoral student); and Dr. Timothy J. Ward, a mechanical engineer whose research area is predicting landslides.

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*Steve Reynolds Next Speaker*

# WRRRI

## Five Year Plan

The preliminary draft of the New Mexico WRRRI's five year plan, entitled Water Problems and Research Needs for New Mexico: A Plan, has been sent to key water agency officials around the state. Many helpful comments are being received and they will be incorporated into the final draft.

Six general problem areas were developed from approximately 100 individual problems which were brought to WRRRI's attention. They are:

1. The foremost water problem in New Mexico is our declining groundwater table and inadequate surface water supply to meet projected needs. Virtually all of New Mexico's problems are consequences of this inadequate supply. There are already critical shortages of water for agricultural, municipal, industrial, and recreational uses in many areas of the state.
2. There is a continuing need for improved irrigation systems and water use management in irrigated agriculture. This is an acute problem, since in some areas of the state only 20 to 30 percent of water diverted is actually delivered to the crop to be irrigated. On-farm management of water through better delivery systems, scheduling of irrigation, or development of stress resistant crops represent a potential means of saving large amounts of water.
3. Poor water quality in many areas of the state is perceived as a significant problem. Included are salinity increases in irrigation return flows, contamination of fresh groundwater through salt encroachment and sediment loading of surface water. Less well documented, but of great concern, are potential threats to both surface and groundwater from the mining industry (uranium, coal), energy development, municipal and rural non-point source runoff, septic tanks, and others. A closely asso-

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March, 1957, when he left the service with the rank of First Lieutenant.

Returning to college, Clyde received his B.S. in geology from Texas Technological College, Lubbock, Texas, and his M.S. in geology from the University of Arizona. He later earned a second Master's degree in hydrology from the University of Arizona.

Wilson had been employed by the U.S. Geological Survey since 1962. He had worked as a geologist on several Texas projects, and later was assigned to the Permian Basin Project in Austin, Texas, as a hydrologist. Clyde came to Las Cruces from Lubbock, Texas, where he was involved in a study of the Ogallala Aquifer.

When Clyde first came to Las Cruces, he developed a proposal for a groundwater study of the lower Rio Grande area. In July, 1972, the formal study began with the office of the State Engineer of New Mexico, the City of Las Cruces, and the Bureau of Reclamation for the Elephant Butte Irrigation District, as cooperators. It was at this time that the USGS moved its office into Stucky Hall with the WRRRI on the NMSU campus.

Wilson was a retired member of the Air Force Reserve and was a member of the Dona Ana County Sheriff's Auxiliary.

Survivors include his wife, Carol; a daughter, Lynn A. Poling of Richland, Washington; and a son, Ron A. Wilson, of the home.

Clyde Wilson was a beloved colleague and friend to us and to many others around the state. He is greatly missed.

A Clyde A. Wilson Memorial Fund in hydrology has been established at NMSU. For further information, please contact Robert Myers at 505-646-1335, or WRRRI, Box 3167, NMSU, Las Cruces, New Mexico, 88003.

## Conference

The second Inter-American Conference on Salinity and Water Management Technology will be held on December 11 and 12, 1980, in Juarez, Mexico. This conference is sponsored by various institutions in Mexico, Texas, California, and New Mexico. Meetings and accommodations will be in the Fiesta Real Hotel (Best Western) in the modern "Pronaf" shopping area of Juarez. Technical sessions are planned on water quality, salt tolerance, water use, and salt and water management. For details contact Dr. George O'Connor in NMSU's Agronomy Department, 646-2219.

# Research Highlights

## Clark Writes Training Manual

Operators of New Mexico's water and wastewater treatment plants will have an easier time performing the laboratory tests used to control their systems as the result of a new training manual prepared through the combined efforts of three state agencies.

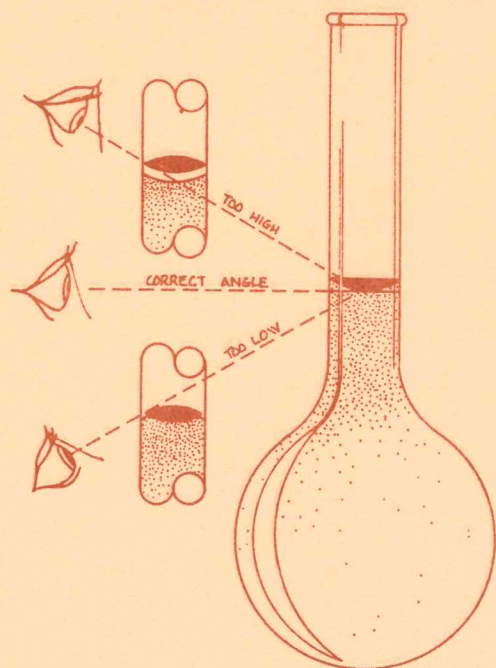
Unlike other technical training manuals, "Basic Laboratory Skills for Water and Wastewater Analysis," relies heavily on illustrations which range from traditional drawings of laboratory equipment to superhero cartoons demonstrating

analytic principles and procedures.

The manual is a technical completion report of the New Mexico Water Resources Research Institute (WRI), and was funded jointly by the WRI and the New Mexico Interstate Stream Commission. It was written by Douglas W. Clark and illustrated by Paul Lehrer, both with the University of New Mexico, Division of Government Research.

"The handbook is designed for anyone wanting an introduction to water and wastewater analytic techniques, but who has not had any formal training in laboratory skills," Clark said. "We have tried to strip away the aura of mystery surrounding lab analysis, while still retaining some of the sense of fun which should be part of any learning experience."

This sense of fun begins with the introduction, a simple three-sentence statement of the manual's purpose, accompanied by cartoons showing a variety of common laboratory problems. Humor is also apparent throughout the six chapters which form the bulk of the manual, covering such topics as





measuring weights, measuring volumes, safety, and laboratory records.

The appendix to the manual is a superhero comic explaining the purpose of lab tests. A variety of technicians, wizards, and imaginary creatures illustrate such concepts as chemical analysis, measurements and methods for handling chemical interferences.

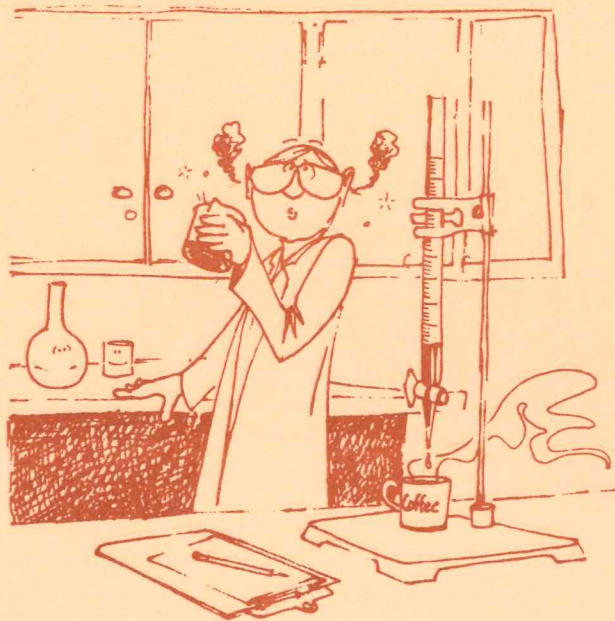
Lab tests are essential for the proper operation of today's sophisticated water and wastewater treatment systems; many of these tests are now required by state and federal laws. But complying with these regulations has been dif-

ficult for operators in many smaller treatment plants, particularly in rural states like New Mexico, where formal operator training is often lacking.

Although enjoyable to read, the manual contains a wealth of practical information which will help operators to be better prepared to evaluate the effectiveness of their treatment systems.

Copies of the manual are available free on a limited basis from the New Mexico Water Resources Research Institute, located on the campus of New Mexico State University in Las Cruces.

**AVOID SMOKING, DRINKING OR EATING  
IN THE LABORATORY.**



*(Continued from p. 1)*

Steve Reynolds, State Engineer, will give the concluding lecture for the fall semester. The series is co-sponsored by the NMSU Civil Engineering Department and WRRRI. Reynolds is tentatively scheduled to speak on Wednesday, December 3, 1980, and will probably include comments on the New Mexico-Texas suit. Watch your local papers for further information concerning time and place of this lecture.

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ciated problem is the protection of water rights when coupled with enforcement of emerging water quality regulations.

4. A problem perceived by many is the lack of an adequate knowledge base on present and projected water supplies and demands. While enough is known to conclude that New Mexico will probably have no new major finds of additional groundwater, there is often a lack of site specific information upon which to base local management and development decisions. This is especially true of those areas where the relationship of surface and ground-

water is not well understood. Coupled with the lack of detailed information is a need for a more efficient information dissemination system for knowledge that has already been obtained.

5. Another concern deals with the problems of uncertainty of water rights. Planning, development, and management decisions are seriously hampered when water rights in an area have not been quantified through adjudications. Federal reserved water rights and especially Indian reserved water rights will take many years to resolve.

6. A final general problem area deals with inadequate local planning, zoning and subsequent haphazard development. There is a vital need to more accurately determine the long-term consequences of different development alternatives so that water quality and quantity (both shortages and flood flows) problems can be anticipated and controlled before they become critical.



## New WRRRI Reports

- 116 Spring Characteristics of the Western Roswell Artesian Basin - Davis, P.; Wilcox, R.; and Gross, G. W. - January 1980
- 117 Demonstration of Irrigation Return Flow Water Quality in the Mesilla Valley, New Mexico - Sammis, T. W. - January 1980
- 118 A Study of Possible Toxic Effects of Chili-Processing Waste Water on Activated Sludge Process - Isaacs, W. P. and Schumacher, A. M. - February 1980
- 119 Water Treatment for Small Public Supplies, Operation Data-1979, San Jon and Alamogordo - Folster, H. G.; Wilson, D. B.; Hanson, S.; and Duran, R. - February 1980
- 120 Demonstration of Irrigation Return Flow Water Quality Control in the Mesilla Valley, New Mexico - Lansford, R. R. and Creel, B. J. - May 1980
- 121 Irradiance, Temperature and Salinity Effects on Growth, Leaf Anatomy and Photosynthesis of Distichlis spicata (L.) Greene - Cunningham, G. L. and Kemp, P. R. - April 1980
- 122 A Geochemical and Hydrological Investigation of Groundwater Recharge in the Roswell Basin of New Mexico: Summary of Results and Updated Listing of Tritium Determinations - Gross, G. W. and Hoy, R. N. - April 1980
- 123 The Energy Impact on Irrigated Agricultural Production of the Estancia Basin, New Mexico - Lansford, R. R., et. al. - April 1980
- 124 Proceedings of the Twenty-Fifth Annual New Mexico Water Conference, "A Quarter Century of Water Research" - August 1980

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**DR. THOMAS BAHR**, Director, New Mexico Water Resources Research Institute.

**LYNDA MACKICHAN**, Editor

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