

ARIZONA WATER RESOURCES NEWS BULLETIN

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PAPAGO WATER BILL PROBLEMS RESOLVED

The Southern Arizona Water Rights Settlement Act was vetoed by President Reagan this past June, cancelling seven years of negotiations between the Papago Indian Tribe and a diverse array of competing water users. The President cited what he considered a serious flaw in the process: the federal government had not been a party to the negotiations, yet would bear most of the financial burden of the settlement.

Chairman Morris Udall of the House Interior and Insular Affairs Committee helped set the stage for the passage of a revised version of the Act through what was described as "a very delicate series of private maneuvers." A compromise agreement was reached between the Arizona delegation, tribal representatives, state officials, and Secretary of the Interior James Watt. The basis for negotiations was agreed upon during a series of meetings in Tucson early in August among representatives of Secretary Watt and local, state, and Indian interests. The parties agreed then to a revised estimate of the initial federal capital cost of delivering water to the Papagos from the original figure of \$122 million to \$18.5 million, and to sharing the costs.

The new bill provides for the establishment of a \$10.5 million cooperative fund, \$5.25 million to be contributed by the state of Arizona, the city of Tucson, affected mines, and the Farmers Investment Company, and a like amount by the Federal Treasury. The fund is to be administered by the Secretary of the Treasury.

In the final conference with Secretary Watt on August 19, agreement was reached on a \$16 million liability provision in the event water is not delivered in specified amounts by 1992, and for annual operation and maintenance costs.

A \$15 million trust fund account, with the authorized governing body of the Papago Tribe as trustee, is also established by the bill. The federal government is to contribute \$15 million for the subjugation and development of reservation lands. The bill also authorizes a \$3.5

million appropriation for constructing irrigation systems on the San Xavier Reservation and the Schuk Toak District.

Background of the Water Rights Dispute

Papago Indians, from time immemorial, have lived on or near the land presently comprising the San Xavier District of the Papago Reservation. This district, established in 1874 as part of the Papago Reservation, contains 70,000 acres in eastern Pima County, adjacent to the city of Tucson. The Santa Cruz River, flowing through the eastern portion of the reservation, was diverted by the Papagos for irrigation and stock watering and provided extensive natural subirrigation for timber and forage.

Since 1940 the depth of water in the Tucson Basin underlying these Papago lands has seriously declined due to water withdrawals by non-Indians. There is no longer any surface flow of the Santa Cruz River on the reservation, except during floods. The rapid decline in groundwater levels has caused domestic and stock watering wells on the reservation to dry up. With the present consumptive use and deeper pumping, depletion of the groundwater supply will continue.

The Tucson metropolitan area, with a population of 531,000, is solely dependent on groundwater for its municipal and industrial water supply. In addition to the city of Tucson and the Papago Tribe, several copper mining and farming operations pump from this water supply.

In 1975 the United States, on behalf of the Papago Indian Tribe, filed a water rights adjudication suit in federal district court against several major water users in the area, including the city of Tucson and the major mining and farming interests, to protect the water resources of the San Xavier Papago Reservation. In this suit, *U.S. and the Papago Indian Tribe v. City of Tucson*, a claim for 160,000 acre-feet of water annually was made on behalf of the tribe.



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In 1978, primarily in response to the Papago lawsuit, the Water Resources Coordination Committee (WRCC) was formed under the auspices of the U.S. Army Corps of Engineers. The voluntary membership consists of representatives of the major water users in the Tucson area (many of whom are defendants in the litigation and later participants to the negotiations), including the city of Tucson and the Papago Tribe.

The purpose of the WRCC was to accumulate data on water supply and use, provide a forum for discussion of water-related issues, and develop a water resources plan to satisfy present and future water needs without resorting to litigation. Subsequently the Tucson Active Management Area (AMA) was established in compliance with the 1980 Groundwater Management Act and an AMA advisory council appointed; Governor Babbitt has appointed the Committee on Alignment, Terminus, and Storage for the Tucson portion of the Central Arizona Project; and a group of concerned water users has formed the Southern Arizona Water Resources Association. All of these groups had some influence on the ultimate agreement concerning the provisions of the Papago water legislation.

Settlement of the Papago Tribe's suit against the water users has been the single most important issue facing the water resources planners in the region. It was predicted that if the Papago claim was successfully litigated, Tucson would face a severe water shortage; community growth and development would be stifled; businesses would fail; and immeasurable damages would be suffered in many municipal, industrial, and agricultural investments.

Agreement on the revised Southern Arizona Water Rights Settlement Act was hailed by Chairman Udall as a breakthrough that "culminates years of painstaking and difficult work."

BOUNDARIES PROPOSED FOR ARIZONA GROUNDWATER BASINS AND SUB-BASINS

As required by the Groundwater Management Code, Arizona Department of Water Resources Director Wesley Steiner has designated boundaries for all state groundwater basins and sub-basins not included in the four initial Active Management Areas (AMA).

Basin boundary lines are important under two circumstances. According to the transportation provisions of the code, it is permissible to pump and transport groundwater within sub-basin and basin boundary lines without being held liable for damages to other groundwater users in the same sub-basin or basin. The boundary lines would also be significant if additional management areas were formed. With the exception of the regional aquifer system in northern Arizona, a newly created management area may not be smaller than one groundwater basin.

Public hearings were held in every county to review the proposed boundaries. The code also provides for modification of the boundaries after they are adopted if new factual data justify the change.

Copies of the entire Basin and Sub-Basin Designation document can be reviewed at the Department of Water Resources' office in Phoenix, the Prescott, Pinal, Phoenix, and Tucson AMA offices, and each of the state's county

recorder offices. The entire document, or portions of it, can be purchased at the Department's office in Phoenix. Information and copies of a statewide map showing all boundaries can be obtained by writing to the Department of Water Resources, 99 E. Virginia, Suite 100, Phoenix, Arizona 85004, or calling (602) 255-1581.

STEPS BEING TAKEN TO SOLVE TUCSON AIRPORT AREA GROUNDWATER POLLUTION PROBLEMS

Representatives from the city of Tucson, the state of Arizona, Environmental Protection Agency (EPA) Region IX, the U.S. Air Force, and Hughes Aircraft Company (HAC) have met in Phoenix to consider the immediate and long-term solutions to the groundwater contamination in the Tucson Airport area, particularly the migration of contamination from the Hughes Aircraft facility (Air Force Plant-44, AFP-44). The following are the major accomplishments resulting from these meetings:

- A working committee was formed to coordinate the problem assessment and remedial activities in the Tucson Airport area and prepare a draft Memorandum of Agreement to define the future roles and responsibilities of each party.
- All data collected to date by the city, the state, and EPA Region IX in the investigation of potential groundwater contamination sources were presented, reviewed, and discussed.
- The Air Force has received approval for the installation of a new pump in the HAC-Credit Union well. The well will be connected to the existing wastewater treatment plant at AFP-44 and pumped at a maximum rate of 75 gallons per minute.
- The working committee evaluated the various alternatives available for pumping wells in order to mitigate the off-site migration of contaminants, including which wells to pump and what to do with the water. The Air Force technical proposal for pumping of HAC-1 (the Hughes well near the area of highest concentration) was reviewed and technical issues will be addressed and resolved.
- It was agreed that the roles and responsibilities of EPA and the Air Force under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA — "Superfund") for off-site investigation will be clarified. The EPA Region IX will continue its off-site investigative activities, including the scheduled installation of 11 monitoring wells to identify other sources of contamination.
- The Air Force has retained the services of Hargis and Montgomery, a Tucson hydrogeological consulting firm, to assist in the continued investigation of the extent of contamination from waste disposal activities at AFP-44.
- The Air Force will submit recommendations for interim on-site remedial actions to minimize further movement of contaminants within the environment at AFP-44 and mitigate the migration of contamination off-site.

In addition to and in support of the working committee's activities, the city will continue its monitoring and aquifer testing program. The state will act as the lead regulatory agency within the committee.

GROUNDWATER CLEANUP FUND ALLOCATIONS PROPOSED

The communities eligible to receive state funds for groundwater contamination cleanup and the system used for site selection were the subjects of a public hearing at the Arizona Department of Health Services (ADHS) on August 25.

Acting on a mandate from the Arizona State Legislature, the Arizona Water Quality Control Council designed a draft priority system for allocating monies from the Water Quality Assurance Revolving Fund, and then developed a list of communities expressing the greatest need for assistance. The \$500,000 fund, appropriated earlier this year, was established by the legislature to aid communities in cleaning up pollution from groundwater used for human consumption.

Copies of the priority system guidelines are available upon request, and copies of the proposed list of eligible communities may be obtained by contacting Dave Woodruff at the ADHS Bureau of Water Quality Control in Phoenix; telephone 255-1272.

WATER MEASURING DEVICES RULES PROPOSED

A draft of proposed rules for water measuring devices that must be in use by July 1, 1983, has been prepared by the Arizona Department of Water Resources and submitted to the Governor's Regulatory Review Council. A public hearing on the rules was scheduled for September 21.

The 1980 Groundwater Management Act requires persons who withdraw groundwater from non-exempt wells in Active Management Areas (AMA) and Irrigation Non-Expansion Areas (INA) to use an approved measuring device. A non-exempt well is one that can pump more than 35 gallons per minute or irrigates more than two acres.

The proposed rules and draft list of approved measuring devices were developed with assistance from a 12-member advisory committee representing farming, mining, municipal, and utility interests, including experts in water measurement. The list is comprehensive, containing permanent and portable devices for measuring flows in pipes and open channels. Devices not on the current draft list can be added at a later date if they meet the accuracy criteria.

Arizona law now provides a 100 percent tax credit for purchase and installation of groundwater measuring devices or amortization of such costs.

Use of measuring devices can increase the efficiency of groundwater use in areas with the most severe overdrafting problems, according to Don Maughan, Deputy Director of Water Management at the Arizona Department of Water Resources. He considers the measuring devices a necessary tool for managing groundwater resources and determining compliance with provisions of the Groundwater Management Act.

Persons who withdraw or use groundwater from non-exempt wells must submit annual pumping reports and pay an annual groundwater withdrawal fee. The first pumping reports, including withdrawal fees, will be due March 31, 1984 for the six-month period of July 1-December 31, 1983. Future reports and fees will cover an entire calendar year.

Persons who receive their water from cities, private water companies, and/or irrigation districts are not required to file pumping reports on water utilized for non-irrigation purposes, including the watering of yards, gardens, and fruit trees.

Those withdrawing or using water from non-exempt wells in Irrigation Non-Expansion Areas must use measuring devices and submit annual pumping reports, but are not required to pay withdrawal fees.

The four AMAs cover portions of Yavapai, Maricopa, Pinal, Pima, and Santa Cruz Counties. INAs are located in Navajo and Cochise Counties, and the recently designated Harquahala INA straddles Maricopa and Yuma County lines.

A copy of the proposed rules and list of approved measuring devices are available for inspection at the four AMA offices in Phoenix, Prescott, Casa Grande, and Tucson and at several other locations in the counties where AMAs and INAs are located. These include all Soil Conservation Service offices in affected counties, except Santa Cruz; all Co-operative Extension Service offices in affected counties; Agriculture Stabilization and Conservation Services offices in all affected counties, except Santa Cruz; and Farm Bureau offices in Maricopa, Pinal, Yavapai and Navajo Counties.

SHORT COURSE:

A three-day short course on the use of hand-held calculators in hydrology will be offered by the University of Arizona in Tucson on November 4, 5 and 6, 1982. The principal lecturers will be Dr. L.W. Gay, Professor of Watershed Management at the University of Arizona, and Dr. Brian M. Reich, P.E., Assistant City Engineer, Tucson. The course is divided into two parts, which can be taken separately. The first part, of 2-days duration, is entitled **Runoff Analysis with the HP-41C Programmable Calculator**. It applies the HP-41C to problems of hydrologic design and analysis with examples typical of practical problems in urban and other areas. Participants will receive programs on magnetic cards, and a manual containing a review of theory, program listings, documentation, users guides and worked examples. The second part, to be held on the final day, is entitled **Advanced Programming Techniques for the HP-41C**. Participants will be introduced to advanced programming techniques and second generation peripherals which can be applied in hydrology or any other computational discipline. For further information, contact Dr. L.W. Gay, Forest Watershed Division, School of Renewable Natural Resources, University of Arizona, Tucson, AZ 85721 (602/626-2313).

Meeting Announcement

The joint annual meeting of the Hydrology Section of the Arizona-Nevada Academy of Science and the Arizona Section of the American Water Resources Association will be held in Flagstaff, Arizona on Saturday, April 16, 1983 at the Northern Arizona University, South Campus. **Abstracts of 200 words or less should be submitted by December 15, 1982** to Dr. Ken Foster at the Office of Arid Lands Studies, 845 N. Park, Tucson, Arizona 85719. Telephone (602) 626-1955. All aspects of hydrology and water resources will be considered. Information regarding subject matter and preparation of abstracts can be obtained from Ken Foster.

GROUNDWATER QUALITY MANAGEMENT SYMPOSIUM SCHEDULED FOR OCTOBER

The Arizona Section of the American Water Resources Association is sponsoring a one-day groundwater quality management symposium to be held at the Sheraton-Pueblo Inn in Tucson on 29 October 1982. The registration fee, which includes the cost of a copy of the proceedings, will be \$12.50 for AWRA members and \$17.50 for nonmembers. It will be collected at the door. The program is as follows:

Morning Session

- 8:00-9:00 Registration
 9:00-9:10 Introduction
 9:10-9:30 *Water Quality Impacts of Effluent Reuse in the Tucson Active Management Areas*, D.M. Esposito, M.F. McNulty, and L.A. Snow, Arizona Department of Water Resources, Tucson.
 9:30-9:50 *An Overview of the TCE Situation in Arizona*, Pam Beilke, Arizona Department of Health Services, Phoenix
 9:50-10:10 *Ground Water Quality Management — A Municipal Perspective*, R. Manning, Maricopa Association of Governments, Phoenix.
 10:10-10:30 *Ground Water Quality Management and the 1980 Ground Water Management Act*, E. Nemecek, Arizona Department of Water Resources, Phoenix.
 10:30-10:50 **Break**
 10:50-11:10 *Limitations in Implementing Aquifer Rehabilitation Projects*, K.D. Schmidt, Water Quality Consultant, Phoenix.
 11:10-11:30 *Stacking the Deck in Groundwater Quality Data: How the Consultant Can Do It; How the Regulatory Agency Can Make Sure He Does Not*, S.J. Keith and L.G. Wilson, University of Arizona, Water Resources Research Center, Tucson
 11:30-11:50 *Prevention and Mitigation of Ground Water Quality Degradation — Reasonable Men, Reasonable Practices*, K. Kolhoff, Mesa.

11:50-1:00 **Lunch**

Afternoon Session

- 1:00-1:20 *Using Aquifers for Waste Water Management*, H. Bouwer, USDA Water Conservation Laboratory, Phoenix.
 1:20-1:40 *Water Quality Monitoring Within the Salt River Project Area*, G. Small, Salt River Project, Phoenix.
 1:40-2:00 *Evolution of a State Ground Water Quality Protection Program*, V.C. Danos, Arizona Department of Health Services, Phoenix.
 2:00-2:20 *Nitrates in Groundwater in Southeastern Arizona: Two Case Studies*, Richard Francaviglia, Southeastern Arizona Governmental Organization, Warren.
 2:20-2:40 **Break**
 2:40-4:00 *Panel Discussion: How Can State and Municipalities More Effectively Protect Drinking Water?* Pam Beilke, Arizona Department of Health Services; Steve Davis, City of Tucson; Dean Moss, Arizona Department of Water Resources; Barbara Tellman, Southwest Environment Services; and Karl Kolhoff, City of Mesa.

For further information contact Ken Foster, 626-2081, Office of Arid Lands Studies, University of Arizona, or Herb Osborn, 629-6381, USDA-ARS, 442 E. 7th St., Tucson, AZ 85705.

Please address your news items or comments on the Project Bulletin to any of the editors:

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