



OKLAHOMA

water news

MONTHLY NEWSLETTER OF THE OKLAHOMA
WATER RESOURCES BOARD

Gerald E. Borelli, Chairman

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McAlester Bank Helps Finance Improvements to Water District

It's the sort of thing that doesn't happen very often, but the 9,000 people served by the Pittsburg County Water Authority in southeastern Oklahoma are glad it did. "It" was a loan— a \$120,000, 10-year deal with the First National Bank and Trust Company of McAlester that will pay for a number of long overdue improvements to their water system.

The story of the Pittsburg County Water Authority is a common one in Oklahoma. Historically, their water treatment and distribution facilities have been challenged in attempts to meet the needs of their customers, spread over 2,510 meters and a good portion of the county east of McAlester. Inefficiency at the treatment plant has caused relatively high water rates, occasional water quality problems and water rationing four out of the last five years.

Conditions should change. The next 10 months will see construction of a new pumping station to pull water from Lake Eufaula, a new supply line to carry it and the cleaning and dredging of the detention pond to hold it. Additionally, the treatment plant's filtration system will be improved, and a new, 1,000-gallon-per-minute pump will boost distribution capabilities.

The loan was arranged by Tom Smith, director of the bank's newly organized Community Development Department, set up to work with public and private entities to enhance the quality of life for area residents. Members of the PCWA approached the bank mired in what Smith calls a "no growth" situation— no money available to make improvements or issue new meters.

"We didn't look at their situation in the same light

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Board and ORWA Cooperate in Leak Detection Program

What weighs five pounds, has modular construction and a true fidelity amplifier possessing high usable gain? It's a leak detector, now being used in a 6-month pilot project operated by the OWRB in cooperation with the Oklahoma Rural Water Association. Together, the two organizations hope to determine the effectiveness and long-term value of leak detection through actual use.

Looking something like a kid's portable, belt-attached stereo but working more like a high-powered stethoscope, the device enables a listener to detect the sound of moving water in lines and hydrants. Initially, the leaks may be found by noting unusually noisy or abnormally pitched water moving through a system. Turning off the water in a suspicious sounding section allows the operator to pinpoint the leak by listening at specific points.

The OWRB has dedicated a \$1700 "Aqua-Scope" to the OWRA on a trial basis, also agreeing to pick up travel costs for the operator. An assigned OWRA staff member will take the leak detector on routine jobs, and also respond to any special request made for the use of the detector. After each use, the operator must send a report to the OWRB noting what system the equipment was used on, what the problem was, what action was taken and how much water was or could have been saved. OWRB Planning and Development Chief Rick Smith says that from such reports he hopes to determine if a leak detection and repair program is cost-efficient.

"At the end of these six months, I'd like to say we spent X amount of dollars and saved X gallons of water,

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Tom Smith (second from right) completes loan arrangements with Ronnie Owens, Pittsburg County Water Authority member; Arvil Barnes, county commissioner; Tom Lordahl, Authority member; and Alton Blackwell, Authority chairman.

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we'd look at a commercial loan. We ended up charging an eight percent interest rate, but the real dividends will be in encouraged growth and new development for the area," Smith said.

It was a loan to cheer the holders of tightened pursestrings in Washington who had broadcast the message that the private sector should assist the states in shouldering some of the shifting financial load. Smith said that even though the loan was in tune with the Administration's policies, it would have occurred under its own initiative.

James McKeown, executive director of the Oklahoma Independent Bankers Association, said that it's the exception rather than the rule for banks to make the initial loans required for water system improvements.

"It's not common. Out of 500 member banks, I'd guess only a few have done that. More banks get involved in interim financing, where they tide a water district over until a long-term government loan is available," he said.

The length and amount of the loan exemplify the dissimilar capabilities of the private sector and the government when it comes to making money available for water projects. Banks generally loan "smaller" amounts of money— anywhere from a couple of thousand to several hundred thousand dollars— for "shorter" periods of time, usually 10 years or less. In the case of the OWRB financial assistance program, the State has appropriated \$25 million dollars to be used as collateral for loans. The commitment puts the state in position to offer high-dollar, long-term, low-interest deals— just the sort of arrangement that many low-on-water, short-on-money Oklahoma communities need.

"We support the water development fund because the kind of problems this district had are the kind of problems you'll find all over the state. And even though we financed this one alone, we can envision participation with the state on projects like it in the future," Smith said.

There's an old adage that says if you want to know what's going on in a town, stop in at the bank. With the work being done by Smith's department, things are looking fine in McAlester.

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and to be able to draw a clear correlation between the two."

There has not yet been a definitive judgement as to the "soundness" of leak detection programs. Smith says there is no consistent point at which it becomes profitable to control loss of water in the system. With the increasing scarcity of water, though, Smith says every drop of water a community can save will be beneficial.

Leak detection and repair is one way in which a municipality or water district can cope with the problem known as "unaccounted for" water. A community can calculate the amount of their problem by taking the total water plant output delivered to the distribution

system over a given period of time and comparing it to the quantity of water registered on customer's meters. The difference is "unaccounted for" or "non-revenue producing" water. Some of that total is spent in firefighting and watering of city parks, but the largest part is lost in system leakage.

In Oklahoma, relatively new distribution systems have held system loss to an estimated eight to 12 percent as a statewide average. Although few utilities have actual leak detection and repair programs, a few have well planned priority systems that use customer reports as a basis to evaluate water loss and potential damage caused by leaks. Leaks are then repaired from a priority list in the most cost-effective fashion.

Several of Oklahoma's larger water suppliers also have annual replacement programs which systematically replace older mains. Tulsa reduced a 21 percent unaccounted-for water figure to 16 percent between 1979 and 1981 through an intensive pipe maintenance and replacement program.

Nationally, it's estimated that water system loss averages 15 percent, the actual amount varying from system to system according to such factors as the age and condition of pipes, prevailing system pressures and ground conditions. In Boston, where water is pumped through lines sometimes as old as 200 years, unaccounted-for water measured 50 percent in 1981, which means half of the water collected, purified and pumped never got to the customers' houses.

Predicted water shortages may find Oklahoma communities emulating the example set by the city of Atlanta, where a leak detection program has been in operation since 1950. Every year, 200 miles of water mains are surveyed for leaks, thereby covering the entire system in a 10-year span. In its first 25 years, the program uncovered and repaired leaks reclaiming more than 12 mgd. Over the past 10 years, the cost of fixing the leaks has been only two cents per thousand gallons.

"This project is part of a good-sense approach to water resource management because it cuts down on



A leak detector incorporating a battery-operated amplifier, probe test rod, ground microphone and headphones is shown off by Oklahoma Rural Water Association Director Gene Whatley and OWRB Assistant Director Mike Melton.

waste. Even though leaking water may percolate to a usable aquifer, it must be pumped, treated, stored and usually pumped again to customers," Smith says.

If the pilot project brings positive results, Smith's goal eventually would be to have a leak detector available in all parts of the state, possibly through OWRB branches.

Enid Well Driller Scores First Perfect Grade on State Exam

Ralph Jerry Richter of the VRV Drilling Company of Enid registered a "first" in Oklahoma last month, scoring the top possible grade on the state-required exam for licensure as a water well driller. It's the only time "100" has been awarded since 1973 when the test was instituted.

Richter and 27 other candidates took the test in Oklahoma City on August 20 during the first Oklahoma Water Well Symposium hosted by the OWRB, Oklahoma Water Well Association and the National Water Well Association. Twenty-five of the group became eligible for licensing, bringing the total number of licensed drillers to 144 — up from 98 in January.

Oklahoma law formerly exempted from licensing companies drilling wells for domestic use, but new legislation effective October 1 will require any company or individual drilling wells for compensation to be licensed, whether the water use is municipal, industrial, domestic or other uses.

Duane Smith, OWRB Ground Water Division staff member in charge of the water board's portion of the event, said the symposium that drew 54 drillers from all sections of Oklahoma benefited both the state and the drillers. The session gave the drillers a chance to become acquainted with state regulations governing their industry and an opportunity to test for licensure.

In addition, the drillers were presented with information to help in their livelihood. A morning program presented by Dr. Wayne Pettyjohn, head of the Department of Geology at OSU, included practical geology and hydrology plus instructions on how to fill out well logs.

Smith pointed out that well logs are the most important data the OWRB has concerning ground water basins.

"Properly filled out, we can tell depth to water, what type of formation the water is in, areas of pollution and a great deal more. Any hydrologic investigation we make begins with an inventory of well logs," Smith said.

Before taking the test, drillers spent an hour in a question-and-answer period conducted by Smith, asking how state law affected their industry, especially in the enforcement area. The drillers made it clear that they wished to work with the state in maintaining strong regulation as well as in developing a vigorous, comprehensive industry education program.

With more than 200 expected to be licensed before the new law's effective date October 1, Smith said more such training/testing sessions might be in order.

ACTIVE CONSERVATION STORAGE IN SELECTED OKLAHOMA LAKES AND RESERVOIRS AS OF AUGUST 20, 1982

PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (AF)	PERCENT OF CAPACITY
SOUTHEAST		
Atoka	116,000	94.0
Broken Arrow	832,035	90.6
Pine Creek	77,700	100.0
Hugo	150,676	95.6
CENTRAL		
Thunderbird	104,016	98.2
Hefner	75,355	100.0
Overholser	15,169	100.0
Draper	79,700	79.7
SOUTH CENTRAL		
Arbuckle	62,571	100.0
Texoma	2,610,675	99.0
Waurika	199,939	98.4
SOUTHWEST		
Altus	98,488	74.1
Fort Cobb	77,437	98.7
Foss	151,074	62.0 ²
Tom Steed	85,961	96.6
EAST CENTRAL		
Eufaula	2,025,604	86.9
Tenkiller	610,119	97.2
Wister	27,100	100.0
NORTHEAST		
Eucha	73,000	91.7
Grand	1,319,390	88.4
Oologah	523,534	96.2
Hulah	30,356	99.2
Fort Gibson	365,200	100.0
Heyburn	6,390	96.8
Birch	18,364	95.6
Hudson	200,300	100.0
Spavinaw	29,950	99.8
NORTH CENTRAL		
Kaw	401,204	93.6
Keystone	615,232	99.9
NORTHWEST		
Canton	97,500	100.0
Optima	6,670	— ¹
Fort Supply	13,781	99.1
Great Salt Plains	31,400	100.0

STATE TOTALS 11,125,220³ 92.8³

1. In initial filling stage
2. Temporarily lowered for maintenance
3. Conservation storage for Lake Optima not included in state total

Data courtesy of U.S. Army Corps of Engineers, Bureau of Reclamation, Oklahoma City Water Resources Department, and City of Tulsa Water Superintendent's Office.



New System Collects Instant Rainfall Data

A contract with the Climatological Survey at the University of Oklahoma will allow the OWRB staff to receive rainfall amounts almost "as it falls", OWRB Executive Director James R. Barnett announced in early

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August. The Board currently relies on reports from persons reading rain gauges across the state, but the \$10,000 pilot project will allow the use of a faster and more comprehensive computer system.

"This is a basic tool for providing surveillance and alert during flash flood situations. With this system, we hope to be able to warn high hazard dam owners of possible problems and provide early technical assistance," Barnett said.

Recreational Facilities Face Budget Axe

Unless local sponsors come forward to share costs, Skiatook Lake may have limited recreational facilities. Corps of Engineers spokesman Jack Thisler says roads, parking, boat ramps, and bathrooms are definitely planned for the area, but Congressional cutbacks may force the deletion of such usual facilities as water taps, fireplaces, picnic tables, shelters, campgrounds and hiking trails. So far, no offers to share in funding have come from the state, the city of Skiatook or private sources. The reduced funding may have similar effects at Copan and Sardis (Clayton) Reservoirs, Thisler says.

Aging Water, Sewer Systems Near Collapse

Many of the nation's city water and sewer systems are on the verge of collapse, according to the new "Good Water America" coalition which has launched a public education program to call attention to what it believes to be an impending national water crisis. The coalition points out that in the next 10 years, 170 of 756 urban areas will be served by water systems 90 or more years old and that in the next 20 years, some 95,000 miles of sewer pipe will have to be installed or replaced.

"America's water delivery and wastewater treatment systems will require a tremendous infusion of effort and funds during the next two decades," says a coalition spokesman.

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Illinois Firm Wins Arcadia Construction Bid

Col. James J. Harmon, district engineer, announced that Brown and Lambrecht, Inc., Joliet, Illinois, submitted the low bid last month for the construction of the embankment, spillway and service bridge for Arcadia Lake on the Deep Fork River near Edmond.

The rolled earth embankment which will rise 104 feet above the streambed, will be 5250 feet long and require 2.5 million cubic yards of earth. The job will also require a mile of road, soil-cement slope protection, an uncontrolled spillway 350 feet wide with concrete sill and retaining wall, stone protection, a service bridge to the gate tower, a drain system, instrumentation and turfing. Completion of the Arcadia project is scheduled for 1987.

AUGUST CROP AND WEATHER SUMMARY

Although warm, dry weather permitted continued crop development in all areas of the state, additional rainfall is needed to boost depleted soil moisture conditions. At the end of the month, top-soil moisture supplies were short in 80 percent of the reporting counties, while subsoil moisture was short in 10 percent.

Crops are beginning to show signs of stress due to the hot weather. Corn, sorghum, soybeans, peanuts and cotton were all in very good or good condition but showing signs of stress. Rain was needed to help settle plowed wheat fields as producers apply fertilizer in preparation for planting.

Temperatures averaged near normal in the southwest to three degrees above normal in the central and northeast. For the month, rainfall ranged from over an inch in the Panhandle to .13 inch in the north central.

Oklahoma Crop and Livestock Reporting Service

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