

# MUELLER Record

APRIL • 1954



# MUELLER

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Since 1857, Mueller Co. has been vitally interested in the design and manufacture of high quality Water Works Bronze. This interest has resulted in the Mueller Thread—adopted as standard corporation stop thread by the AWWA, the introduction of copper service pipe and copper service connection thread design, as well as many other improvements for the water works industry.

All components of Mueller Corporation Stops are cast from Mueller Water Works

Bronze; the key is precision ground and lapped into the body, and carefully tested and inspected. All exposed threads are accurately machined and coated with protective plastic, assuring arrival in an undamaged condition. This extra precaution also assures their quick, easy insertion into the main under pressure with the tapping machine.

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H-15000 with Mueller Thread inlet—straight copper coupling nut outlet

H-15035 with I.P. thread inlet—eighth bend copper coupling outlet

H-15070 with Mueller Thread and compression joint inlet (for thin wall pipe)—quarter bend swivel copper coupling outlet



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H-10002 with Mueller Thread inlet—lead flange outlet

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**MUELLER CO.**

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### THIS MONTH'S COVER

A city official contemplates the diminishing water supply in the city reservoir—caused by the prolonged drought conditions in North Central Missouri. The official is E. Robert Turner, city manager of Brookfield, Missouri, whose water system has been in a bad way but is now on the road to recovery.

# Recording Our Thoughts

A story in the February issue about a dog that walked his beat and guarded the city hall has brought the Mueller Record a number of complimentary letters. One came from R. L. Ellis of Miami Beach, Florida, who was a Mueller customer from 1904 until his retirement a few years ago. He will soon observe his 80th birthday.

He wrote that his many years as a customer speaks well for Mueller's integrity and type of service—and also maybe for "my own good judgement."

Mr. Ellis is a dog lover and an expert on the animal. He pointed out what he considers to be two errors in the story: (1) Bull (the dog's name) was a Bull Terrier, perhaps a Staffordshire, but NOT a Bulldog; (2) The word THOROUGHBRED is applicable only to race horses. We referred to Bull as a thoroughbred. Mr. Ellis points out that we should have said PURE BRED.

The dictionary failed to give us a perfectly clear picture on this question, but we admit that the word thoroughbred usually is reserved for race horses.

The editor can alibi easily on this one. As a native of Kentucky, everything is "thoroughbred."

\* \* \*

Lorin E. Grosboll, Mueller Co. sales representative, reports that "Monty" Beck, Director of Public Utilities, Lexington, N. C., recently found a copy of the Mueller Record dated March 31, 1923.

The magazine was found while the owner was preparing to move to new quarters. Mr. Grosboll said that he and the finder received a great deal of pleasure in reading the old issue.

We are certain that the late C. N. Wagenseller who founded the Mueller Record in 1910 and edited it until his retirement in 1945 would be proud to know that an issue of his magazine published in 1923 was still being read and enjoyed by a longtime Mueller Co. customer.

**MUELLER Record**

April • 1954

WALTER H. DYER, Editor

**MUELLER CO.**

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Noah Skinner, left, Brookfield, Missouri, water superintendent, and City Engineer Lemuel Eison check a water distribution map for information concerning the location of some valves. These two men and Street Superintendent Loren Whaley give City Manager E. Robert Turner a formidable team with which to combat the city's water works problems.

# A City Reels, Then Rallies In Water Crisis

**Long Drought, 29 Main  
Breaks Hit Brookfield, Mo.**

Money, nature and time!

What happens when they thrust all their fury upon the people? What does a city do when the worst drought in recent history suckles the only available water supply to the point where water reserves become dangerously low?

When time runs out on a water system leaving in its wake a total of twenty-nine serious water main breaks, when valves—some in operation since 1890—fail to close off the flow of water in order that breaks may be repaired, what can a small city do?

What can be done when there isn't enough money available to continue a much needed improvement program so vital to the lives of the city's residents? Where do you get urgently needed funds when a bond issue is out of the question

because one for \$250,000 was passed three years earlier and spent on initial requirements?

Can any city, large or small, solve these problems?

The answer is yes, and you can point to Brookfield, Missouri, where these problems are very real. They are being solved, one by one, in this city of 6,000 people largely through the efforts of the city's residents and the fighting spirit of its new city manager, 28-year-old E. Robert Turner.

Turner learned this business of managing a city under the tutelage of L. P. Cunningham, city manager of Kansas City, Missouri, who is sometimes referred to as America's "dean of city managers." He served under Cunningham as assistant to the city manager before he was appointed to his Brookfield position in January, 1953.

Turner completed work for a master's degree in governmental administration at the Wharton Graduate School, University of Pennsylvania, after which he made a rapid climb in the city administration at Kansas City. He began as administrative research assistant in the Department of Budget, later was named assistant director of civil defense, and finally was chosen by Cunningham to become the administrative assistant to the city manager.

When he sized up his new job at Brookfield, he immediately realized that perhaps his greatest problems lay in the city's water department. Like small towns everywhere, Brookfield's water department faced the problem of meeting increasing costs with a relatively static income. The problem of financing the maintenance and replacement of many worn out facilities in a water system is of major proportions to all small cities. Ironically, it was not for several months—until the area felt the sting of the great drought of 1953—did the new city manager fully realize the task ahead in restoring the city's water department to normalcy.

With no reserve fund available, Turner took one look at the water department's financial record and knew he was in a tight squeeze. The city was paying \$22,000 a year in debt retirement and fixed charges. Approximately \$33,000 a year

was being expended for regular operation and maintenance of the department. Yet the estimated income for the fiscal year 1953-54 was slightly more than \$55,000. It was evident that little or no money would be available for the replacement of worn out equipment or for an unusual emergency expenditure, one which was to arise with the coming of the drought just a few months later.

To understand the problems Brookfield faced, it is necessary to go back a few years. The water system as it stands today was built in 1921. However, there are some mains and valves now in service that were originally installed in 1890. As a city, Brookfield was founded in 1859. It is located in the beautiful rolling country of North Central Missouri. U. S. Highway 36, often referred to as the Indianapolis to Denver route, passes through the city.

As the years passed the water department prospered, although records show that little equipment was ever replaced. Then came 1948 and a temporary local

City Manager E. Robert Turner and Street Superintendent Loren Whaley discuss some foundation improvements and drainage work on the exterior of Brookfield's water treatment and pumping plant.



drought dropped the water supply in the then existing reservoirs to a dangerously low level. In addition, a generally decrepit condition had begun to exist in the system.

As a result of this condition, the Missouri State Health Department held frequent consultations with the City Council and asked that remedial steps be taken to correct the situation. The Council immediately took steps in the proper direction, but nonetheless, the State Health Department voted to withdraw its approval of the Brookfield water system. It should be pointed out that the state considered the water safe for drinking; however, approval was withdrawn because the system was not up to Health Department standards.

Because of these factors, the city administration in 1950 called in Black & Veatch Consulting Engineers of Kansas City and asked the Kansas City firm to make a comprehensive survey of the water system. Black & Veatch, after spending several months gathering data they considered essential to the improvement of the water system, recommended that a revenue bond issue be put to the vote of the people. It was decided to set the figure at \$250,000.

Unfortunately, the survey was made in a period of spiraling construction costs and in the time between the engineering survey, the passing of the issue at the polls and the starting of construction, costs had increased tremendously. Because of higher costs, certain portions of the recommended improvements could not be carried through with money available.

The citizens of Brookfield voted in favor of the revenue bond issue on February 20, 1951, and this act, Turner declares, was the beginning of a new era for the Brookfield water department. The money was to be used for the general improvement of the water works system. Improvements were to come under three categories: source of water, treatment of water and the distribution system.

Despite spiraling costs, improvements which were completed in the spring of 1953 and paid for with the \$250,000 included the following:

1. Additional reservoir storage capac-

ity of 30 million gallons, bringing the total reservoir capacity to 105 million gallons.

2. A new 500,000 gallon elevated tank which replaced a 100,000 gallon capacity standpipe.

3. A new primary settling basin, in addition to the already existing basin, with a capacity of 126,000 gallons. This increased the total treatment time to seven hours and ten minutes. Previously, the treatment time was slightly more than two hours.

4. A new 60-horsepower high service pump with a capacity of 720 gallons per minute.

5. A rapid sand filter which increased the filter capacity from 715,000 gallons per day to one million gallons per day.

6. Improvements to the distribution system which included new ten-inch transmission mains from the plant and to the new water tower at a cost of approximately \$30,000. (These system improvements were separate.)

Turner said spiraling costs prevented the following improvements which originally were scheduled to be a part of the bond issue expenditures:

1. Funds were not available for a \$30,000 improvement to the existing 300,000-gallon capacity clearwell.

2. The city was unable to make some very necessary electrical improvements in the water treatment plant. This expenditure would have amounted to about \$5,000.

3. Some contemplated distribution improvements were not possible. These included the replacement of four, six and eight-inch mains with larger capacity mains.

The improvements allowable under the bond issue were nearly completed when Turner took over his post in January, 1953. The city commenced filling the 30-million gallon reservoir in February and the new 500,000-gallon elevated tank was placed in operation in May.

Meanwhile, Turner made three important appointments. He wanted a good man for the job of water superintendent and he found one in Noah Skinner, an employee of the Brookfield water depart-

ment for the past 22 years. Skinner has worked as a meter reader, meter repairman, water distribution repairman and pump operator at the treatment plant. He knew every job in the department.

For the job of city engineer, Turner was equally wise in naming Lemuel T. Eison to that post. Prior to service with the city, Eison spent six years as a private contractor and for more than 20 years, he served with the United States Corps of Engineers in a civilian capacity.

Loren Whaley, an extremely well qualified and hard working city employee, was appointed street superintendent. This position is important in the Brookfield water picture as the street superintendent plays an important role in the installation of new mains and the general maintenance and repair of the distribution system.

With this capable team in command,

City Manager E. Robert Turner inspects settling action in the city's new 126,000 gallon capacity primary settling basin.

plans were formulated, and to some extent carried out, for the continued improvement and progress of the water system.

Then in July and August, 1953, disaster struck.

Drought conditions were becoming apparent by the end of May. Yellow Creek, a somewhat unpredictable stream and the city's only source of water supply, began to dry up rapidly. It went dry so fast that the city was unable to fill more than two-thirds of the new reservoir.

Through June, July and August, the area around Brookfield experienced unusually hot, dry weather. During July when drought conditions were becoming critical, the extreme heat was causing a rate of consumption far above any recorded in the city's history. The water level in the reservoir receded at a rapid rate. As July neared an end, the very



dry soil began to take its toll on the distribution system. The first main break came late in July. From that day until February, 1954, the city experienced twenty-nine serious breaks. Dry soil was blamed for the breaks because it contracted and snapped the mains, especially the older and more brittle ones.

Turner says this made the city administration all the more aware of the weak spots in the water system, for when workmen tried to repair the breaks, officials learned of the valves' worn out condition. In trying to shut off the water to repair the breaks, the men found that many valves were stuck, broken or otherwise inoperative. On occasion, Turner said, it was necessary to shut off whole sections of the city to repair water main breaks because the proper valves would not work.

The many breaks and valve failures created a considerable amount of unusual expense to the water department and for that reason, proper corrective action could not be taken immediately. The breaks were repaired with sleeves, but the inoperative valves and the weak sections of mains could not be replaced because of a lack of funds.

As the drought continued on past what was normally the fall rainy season, it became apparent that water from some other source was necessary to supplement the supply in the city's reservoirs. In the section of Missouri in which Brookfield is located, the possibility of underground water is virtually out of the question. Water exploration experts in a test of the area reported that there were no shallow wells or sheet water available in sufficient quantity to supply a community of more than 100 persons.

In addition, deep wells were out of the question as the water available below the limestone strata was of very high mineral and saline content and was unfit for human consumption. Turner said it was found that this water could not be treated for human consumption under any circumstances.

Brookfield was very fortunate, however, in having a nearby railroad lake which was now very seldom used by the railroad. A pipeline from the lake to the railroad facilities in downtown Brook-

field ran within 2,500 feet of the city reservoirs. In November, 1953, the city obtained permission from the Chicago, Burlington and Quincy Railroad to cut into this line for a much needed source of water.

The city built a \$10,000 permanent cast iron ten-inch pipeline from the railroad pipeline to the reservoir. The addition of the railroad lake as a source of water made it possible for the city to continue providing water long after the reservoirs would have gone dry.

Turner said the city is negotiating with the CB&Q for permanent water rights to the lake. When filled to capacity, the lake holds in excess of 87 million gallons. This, when added to the 105-million gallon capacity of the city reservoirs, will provide the city with an approximate 200-million gallon storage capacity which should be more than adequate for the city's needs in the future even under the most severe drought conditions.

Turner said no story of Brookfield's water problems would be complete without mention of the wonderful cooperation of the town's citizens. Because of water conditions and dwindling supplies in the reservoirs, city officials reluctantly imposed water consumption restrictions in September, 1953. As the drought continued, the public became more and more water conscious. By telling the city's problems to citizens on the street, through local newspaper stories and public speaking appearances, Turner waged a campaign to make the public conservation minded. The results were gratifying.

Consumption in July was running over 600,000 gallons a day. In October, it had dropped to 450,000 and in January, 1954, water consumption dropped to a record low of 250,000 gallons per day. The cooperation of the public in a sense created a new problem. With decreasing consumption, water revenues in turn decreased. It became necessary to impose a double water rate during the months

In the photo at right, Chief Pump Operator Ben Delaney, left, and Maintenance Chief Charles Roebken conduct water treatment tests in the city's newly constructed laboratory at the water treatment and pumping plant.

of January and February this year. There were two reasons for this move, (1) To further cut back consumption and (2) To insure the necessary revenue for the water department during this period of unusually low consumption.

The city manager said that not a murmur of protest from the public was heard by city officials during this period. When the emergency continued on through February, it was decided by the city administration and approved by the Brookfield Citizens Improvement Committee, made up of 25 representative citizens, that the public was now sufficiently educated to the shortage and that the double rate was no longer necessary.

In place of the double rate, Turner and the Citizens Committee recommended to the City Council a measure they knew the city desperately needed. They asked for a permanent 22 per cent increase in the rates that hadn't been changed for many years. The Council reviewed what they had experienced during the past twelve months and placed the increase in effect immediately.

Turner and the town's citizens are optimistic about the future. The permanent 22 per cent increase will be sufficient to keep the water department going financially during the drought emergency. Turner says that if the community is fortunate enough to receive adequate rainfall during the spring to break the drought, the city can be sure their water system is on its way to recovery.

In talks with citizens, Turner tells them that the additional revenue provided by the rate increase will be used almost exclusively as a depreciation fund. Money will be set aside to provide for the gradual improvement and repair of water department facilities. Turner vows that this replacement and repair will continue until the day dawns when every piece of equipment in the water department is up to date and in good working order.

He knows there is no simple solution or magic formula for solving the system's problems. It took 40 or 50 years to get the system in its present condition,



he says, and it will take a number of years to complete the giant task ahead.

His pay-as-you-go plan is already being undertaken to a certain extent. The water treatment plant is being rewired, repaired and painted inside and out. As part of the project, a complete new laboratory has been installed. A new water meter repair workshop has been built. In addition, new mechanical bookkeeping equipment has been purchased to improve bookkeeping and billing methods. In the future, water bills will be sent out monthly rather than every other month.

Plans are being made for the gradual replacement of hydrants and valves, Turner said. He has initiated a new maintenance program for the system which will add years to the proper operation of water works facilities.

With men like Turner, Skinner, Eison and Whaley at the helm, we hold a firm belief that Brookfield is on its way to the time when it can again enjoy a water system in A-1 condition. To quote Turner: "There isn't a doubt in anyone's mind that the job will be done. With the help of God and His grant of sufficient rainfall, Brookfield will stand ready before too long to compare its water department operation with that of any comparable size city in Missouri, or for that matter, in the nation."

*(EDITOR'S NOTE: As this issue of the Record goes to press Brookfield is taking successful steps toward "breaking the back" of the current drought emergency. Rains at the end of March and early part of April started a relatively small flow in Yellow Creek. At the request of the city, volunteers constructed a sandbag dam which served to hold the water until regular and auxiliary intake pumps could transport it from the creek to the reservoirs. More than 100 volunteers—doctors, laborers, lawyers, mechanics, railroad men, ministers and merchants—built the dam and helped to keep the many auxiliary pumps in operation.)*

*City Manager Turner said, "You can't beat these people. We still have a long way to go before we can safely feel the drought emergency is over. However, with this spirit and cooperation and near-normal rainfall in the coming weeks, I believe our problem will be solved.)*



The new 500,000 gallon elevated tank which replaced a 100,000 gallon capacity standpipe is a part of initial improvements paid for by the city's \$250,000 bond issue.

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Don't look back. Something might be gaining on you.

\* \* \*

The government should be mighty thankful the taxpayers have what it takes.

\* \* \*

City slicker to clerk in small Ozark hotel: "How much for a room in this rat's nest?"

Clerk: "For two rats, or are you alone?"

## GOING TO FRANCE

# W. H. Hipsher Is U. S. Delegate To Paris Conference

William H. Hipsher, executive vice president of the Mueller Co., has been named to the United States delegation for the second international conference of manufacturers in Paris, France, May 23-25.

The appointment was announced by the National Association of Manufacturers.

Mr. and Mrs. Hipsher will sail from New York May 7 and arrive in Paris May 14.

Mr. Hipsher has been assigned to the group of United States delegates that will make a tour of industries in Belgium, Holland and Luxembourg starting at the Hague May 16 and ending in Paris May 23 when the conference opens. Other United States groups will visit industries in other countries during the week before the conference.

A formal dinner May 25 will end the conference.

The conference, sponsored by the Council of European Industrial Federations, will bring together in Paris about 400 top industrial leaders from both sides of the Atlantic. Every nation of Western Europe will have a delegation.

The United States delegation, headed by Board Chairman H. W. Prentis, Jr., of the Armstrong Cork Company, will represent a cross section of American industry.

Development of free enterprise will be the theme of the conference, with talks centering on stable employment, wage and personnel policies, and ways of reducing unemployment as new methods and machines come on.

The first international conference, attended by some 300 European and 75 United States industrialists, was held at New York in December, 1951. It was devoted to increased productive efficiency. It was the first organized effort



**W. H. HIPSHER**  
Executive Vice President

to bring together the free world's top industrialists for an exchange of views.

After the conference is concluded, Mr. and Mrs. Hipsher will leave Paris May 26 for an extended tour of Europe. Their travels by car, train and air will include visits to Rome and Tivoli for all-day tours, to Naples and Capri and then to Florence and Venice.

Their journey will be continued with travel to Lucerne, Wisenbaden, Cologne and to London. The European tour will end with a final trip to South Hampton where Mr. and Mrs. Hipsher will board the Queen Mary and sail for New York on June 17.

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Another day, another dollar in the hole.

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The reason some women are so magnetic is because their clothes are charged.

\* \* \*

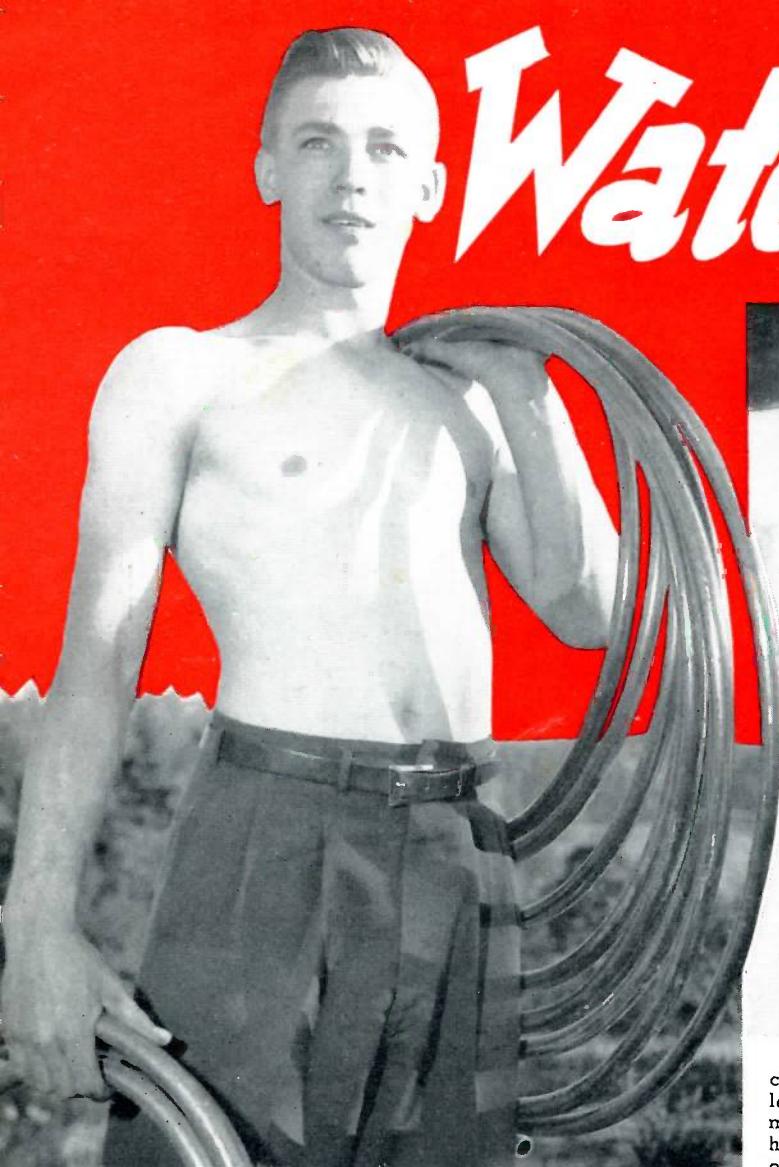
She: "I guess I'm just a babe in the woods."

He: "Meet an old forest ranger."

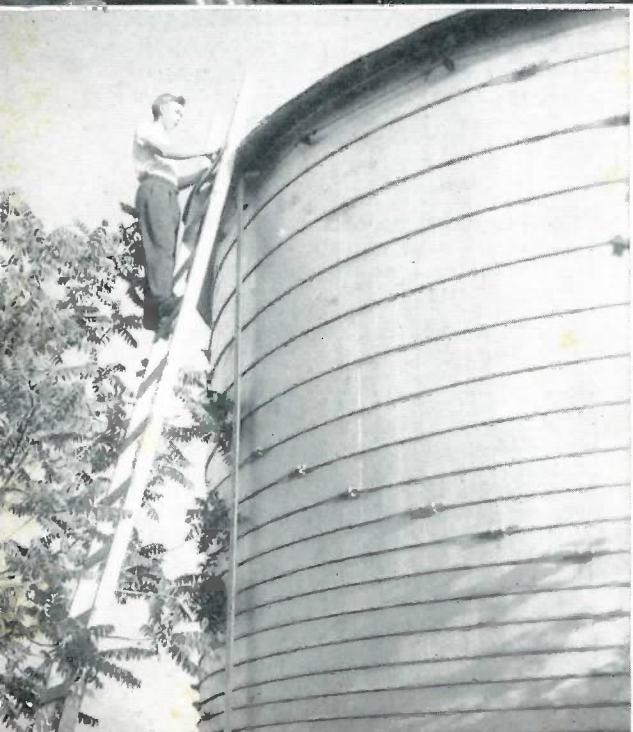
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"It's not the work I enjoy," said the cab driver, "it's the people I run into."

# Water Boy



Armed with a Mueller E-4 drilling machine and a wrench, the trouble shooter leaves the workshop of the district he manages. Below left, young Gregor climbs high to check water level and float switch on one of the water district's storage tanks.

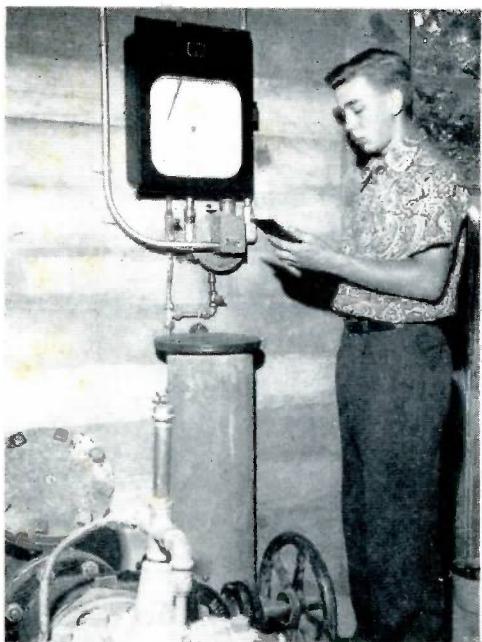


*(Editor's Note: The Mueller Record is grateful to R. Harlow Schillios, Eugene, Oregon, newspaperman, who took the photographs accompanying this story and whose feature about Mr. Gregor written two years ago for the Portland Oregonian, was used as a source of material for the following article.)*

When 17-year-old John C. Gregor asked Fred Getchell for a job with the College Crest Water District of Eugene, Oregon, he scarcely expected to vault to the top spot in the department just two years later.

A high school senior at the time, John planned to attend the University of Oregon at Eugene the following year, and he saw the water district job as a means of helping finance his higher education.

MUELLER RECORD



This dial registers the level of water in the main concrete tank. John checks this daily as one of his routine jobs. He has been manager of the district since he was 19 years old.

He already was helping his father, Clifford S. Gregor, operate a 65-acre beef ranch.

John's first assignment was to dig a ditch in front of his home at 224 Ingalls Way. He dug many other ditches during the next two years, but while he was an assistant he also was quick to learn the district's water functions in every detail.

Consequently, when a heart attack claimed Mr. Getchell in 1952, John seemed to be the obvious choice to replace him as manager of the College Crest Water Supply District.

If there was any doubt as to his ability to wrap up this third full time job in a 24-hour period, these doubts soon disappeared, for he has maintained the district at a high level of service.

John, 19 years old at the time of his appointment, was carrying the maximum number of courses permitted for a sophomore majoring in physics at the University of Oregon. Today, he is a 21-year-old junior and has changed his major to accounting. He has cut his study schedule to the normal load.

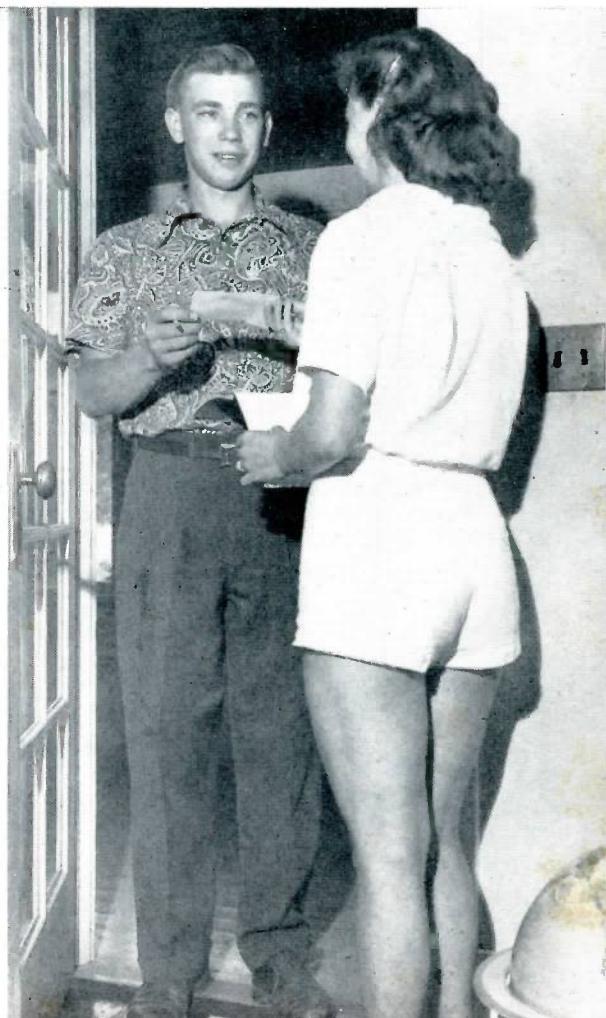
The district he manages embraces one

of Eugene's better residential districts with spacious homes that look down upon the lights of crowded Eugene proper. Probably the best known occasional resident of the area is Senator Wayne Morse, whose white ranch fence encircles pleasant fields, stables, exercise track and his Oregon home.

There are 556 customers in the district who have often wondered why the "water boy," as John is often referred to, has little time to chat. Folks had come to expect the latest "hillside news" from the previous manager who could discuss realty and personalities while serving the customers.

The water district was formed and incorporated by a vote of the people, February 7, 1934. It is about two and one-half miles long by one mile wide, and adjoins the south limits of Eugene.

Below, John collects a customer's monthly water bill. With 556 customers in his water district, a ranch and a heavy college course, he has little time left over.





As a college sophomore, John had little time for girls because his duties as a student, rancher and water district manager left little time for recreation. Today, the 21-year-old junior at the University of Oregon, shyly admits he has found time for a date or so each week with attractive Bonnie Brackin, his girl friend. She is a university sophomore.

The district buys its water from the city which pumps the supply from the McKenzie River.

Not long after young Gregor took over as manager, the district installed a new elevated tank and rerouted and laid pipes for it. John drew the specifications. The district has undergone a two-year expansion program and the installation of another pump during March this year brought this program to its completion. During the spring and summer of 1952, the district installed 6,000 feet of six-

inch and four-inch cast iron pipe and five new Mueller hydrants.

"We did the work ourselves," John says. He hired and supervised the construction crews and rented the necessary heavy machinery. He also did the preliminary planning and engineering for the jobs. In order to provide better water service, the district now has four zones on the "hill" instead of three. Water is pumped from one level to the next. The top zone has a pressure tank.

The College Crest Water Supply District's expansion program has used \$26,000 of a \$38,000 revenue bond issue authorized prior to young Gregor's appointment as manager on March 1, 1952.

"It has been a tremendous task," says John's mother, "requiring contracts, meters to read each month, bookkeeping, broken pipes to mend, new meters and pipes to install, tests to be taken to check on the healthfulness of the water, men to hire for various jobs, water pressures to watch, and everybody to keep happy with an outgrown system."

John is thankful his telephone is on a one-party line for this instrument does its duty. Nor is he free from his water job while on the campus. His family has his schedule and has called him out of classes many times to trouble shoot.

Dropping his accounting books, the "water boy" thumbs through his telephone messages: Nathan Rubenstein wants to check his bill, Harold Wickstrom has discovered a leaking pipe beneath the road, the Anton Reinholtz family is moving in and wants its water turned on.

The district has five non-paid commissioners: Robert Hall, Hubert Moor, Herbert Large, John Nordstrom and H. T. Daniel.

Having the service manager in the family alters home life a bit, the Gregors find. Family vacations are postponed. It wasn't uncommon for the conscientious John to stop his mother a couple of years ago from watering the lawn at evening hours. "Gotta save the pressure for the folks on the hill, Mom," he would say. Mrs. Gregor will have a freer hand with her lawn duties this summer, however, as the days of low water pressure

are over now that the expansion program has been completed.

You would think that John's duties as a water district manager, student and farmer would occupy all his time. It doesn't, however, for he has become vice-president of Westminster House, a Presbyterian sponsored foundation on the University campus. He has become very interested in the organization's activities and through it has participated in the Sunday morning worship services of several of the churches in the area. A few weeks ago, he gave a sermonette at the First Presbyterian Church in Springfield, Oregon.

As a result of his fine work with this group, Westminster House is sending him to the Westminster National Assembly at the University of Illinois in Champaign next July. During his visit to Illinois, he plans to visit the Mueller Co. main office and factory in Decatur.

As a college sophomore, John said he was much too busy for a steady girl friend—and his work made that understandable. Today, he shyly admits that he also has worked into his schedule a date or so a week with "my girl friend," attractive Bonnie Brackin, who is a sophomore at the University of Oregon majoring in English.

## New York AWWA Group Holds Annual Meeting

Members of the New York Section of the American Water Works Association, Water Works Operators' Groups, Filter Plant Operators and all others who are interested, attended the New York Section Annual Spring Meeting at the Hotel Woodruff, Watertown, New York, Thursday and Friday, April 22, 23.

In addition to all technical sessions, Dr. Louis K. Silcox, president of the American Society of Mechanical Engineers, was guest speaker. Arrangements were made for a field trip through the New York Air Brake Company plant in Watertown, and plans for a water works training program was discussed.

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## Electric Water Systems Have Seen Rapid Growth

From 50,000 electric water systems in 1932 to over 700,000 in 1953—this is the 21-year record of the industry which has brought the numerous blessings of running water under pressure to three out of five of the nation's farm families during that period.

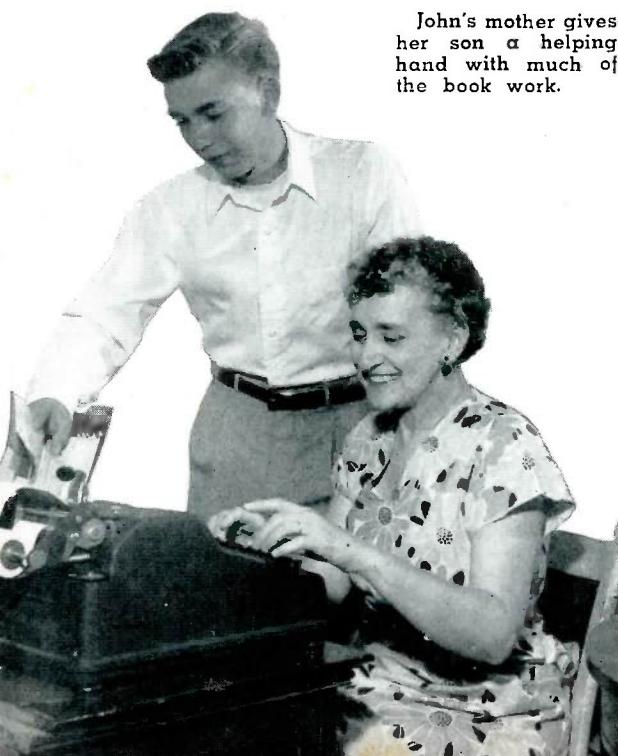
Much of the success of the pump industry in selling water systems to America's farm families has been due to National Water Systems Month, an annual event which will be held again in May for the sixth consecutive year.

Running water under pressure is the one thing above all required to give the farm or non-farm rural home every convenience and comfort of a home or apartment in the city.

That fact will be emphasized repeatedly during National Water Systems Month by the manufacturers of electric water systems, REA and privately-owned companies supplying electrical power, and interested government agencies.

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A woman posed for a snapshot in front of the fallen pillars of an ancient temple in Greece. "Don't get the car in the picture," she warned, "or my husband will think I ran into the place."



# Perfect Shipping Month

The nation's shippers and carriers pause this month to re indoctrinate themselves with the principles of good packaging and shipping. Although shippers and carriers everywhere wage a year-around campaign to improve techniques and to lessen the staggering number of damage claims, special attention is focused on the problem each April, the industry's "Perfect Shipping Month."

"Perfect Shipping Month" is an organized campaign to protect products enroute from the manufacturer or producer to the customer. It was originated about fifteen years ago in Decatur, Illinois. Since that time, the Transportation Club of Decatur has been host to carriers' claim officials each year at the club's March meeting.

On March 9, Mueller Co. had the pleasure of being host to some 40 shipping industry executives preceding the De-

catur club's annual meeting. The visitors toured our Decatur factories and saw first-hand our products during the stages of being manufactured, and later observed these same products as they are handled in our Shipping Department.

It is gratifying to point out that these shipping experts were greatly impressed with what they termed our excellent packaging and shipping methods.

Despite the fact that Mueller Co. is considered a "heavy industry" and that it is less likely for our products to be damaged enroute to customers, as is the case of many other manufacturers, we none-the-less protect each piece of goods sold with the very best in packaging.

Safe and attractive packaging has been the rule. Research on this shipping problem is ever present with us. We are still looking to the future, making every effort to create a safer and an even more attractive package.

Mueller Co. was host to forty shipping executives on March 9 prior to "Perfect Shipping Night" which is observed annually by the Transportation Club of Decatur. Visitors and Mueller Co. personnel who were hosts to the group are shown arriving at Plant 4 for a tour of our new plant.





Above left, shipping officials view our products during the process of manufacture. R. K. Duncan, tool engineer, foreground, explains the method of manufacture. At right, Robert Tauber, methods engineer, shows the group how the finished product is moved to the Shipping Department.



Paul Parsons, production control manager, points to the giant hammer in our Iron Machine Shop while a group of visitors look on. At right, Chuck Girard, assistant Shipping Department foreman, tells how one of our products is packaged.



One of our products completely packaged and ready for shipment is observed at left by the shipping executives. Charles Moore, second from right, standards engineer, and George Turner, right, Shipping Department checker, reveal the methods used in packaging this product. The photo at right shows our packaged products in storage. Harley Himstead, left, head records clerk, guided this group on its tour. J. A. Stoudt, Mueller Co. traffic manager, is fifth from the left in this photo.

# Frederick Maryland To Remove Drive Ferrules From Main 108 Years Old

By WILLIAM DAVIS, *Supt.*  
Water Department, Frederick, Maryland

(**EDITOR'S NOTE:** *A century ago—before the invention and patenting of the first tapping machine by Hieronymus Mueller, founder of Mueller Co.—the most common method of making a service connection to a pressurized water main was to drill a hole nearly through the wall of the main and insert a drive ferrule where it was held by friction.*

*The drive ferrule had one of two shapes: it was either an angle fitting incorporating a ground key stop, or it was an "L" shaped fitting. Both incorporated a heavy raised flat in line with the inlet. The type ferrule that incorporated a stop could be inserted in the main and the service pipe later connected. If it were of the type without a stop, it was necessary to connect the service pipe to the drive ferrule before insertion into the main (usually a wiped joint connection.)*

*Insertion of either fitting was done basically as follows: A hole was drilled nearly through the wall of the cast iron pipe until the point of the drill barely penetrated the inner wall. Then the drill was removed leaving a thin web of pipe holding the water. The drive ferrule which had a very shallow taper on the inlet end was then placed into the hole. While one workman held the drive ferrule in place, another workman, using a heavy hammer or light sledge hammer, struck the rear surface of the ferrule a very sharp blow. This would, in most cases, drive the ferrule on through the remaining web of cast iron pipe, and hold the ferrule in the main by friction.*

*This method was at the best undependable, and in many cases entirely unsatisfactory. It was from attempting to improve this method of making a service connection into a pressurized main that resulted in the founding of Mueller Co. as we know it today.*

*The following article was written by William Davis, water superintendent at Frederick, Maryland, where a number of ferrules are still in operation. Mr. Davis is gradually*

*replacing these ferrules and in this article he describes the method he uses.)*

The City of Frederick, Maryland, is faced with the problem of removing drive ferrules from cast iron mains that are 108 years old.

First, let me state that the ferrules we must remove are elbow shaped and were inserted by driving them into the main. Held in the cast iron mains by friction, they are made of brass and are attached to the lead lines by a solder connection.

The following is a description of the method of removal we have employed in the past several years. This method has proven quite satisfactory and we plan to again remove ferrules this year in this manner.

After the ditch has been opened and it has been determined that the line must be replaced, we assemble the following equipment: a pine pole seven feet long, two and one-half inches in diameter and sharpened on one end; a length of stout wire; a board, and a Mueller B tapping machine and its related equipment.

The wire is fastened to the ferrule near the elbow and a workman standing on the edge of the ditch places the blunt end of the pole on the ferrule while another workman taps the ferrule on the side to loosen it in the main. When the ferrule is sufficiently loose, we clear the ditch and, after removing the pole, use the wire to pull the ferrule clear of the main.

We then place a board or some baffle over the stream until the ditch fills to the point that the water acts as its own baffle. We then insert the sharp end of the pole in the main thus shutting off the flow of water. The ditch is then drained. The next step is to feed the Mueller B tapping machine over the pole with the boring bar and cap assembly

(Continued on Page 22)



A drive ferrule such as the one described in this story.

## Introducing

# Ross Caylor, Sales Division Assistant, Water Department

Ross Caylor's career with Mueller Co. has moved along at a rapid pace since he was employed in our Shipping Department eight years ago. It has been that long since Ross returned home to Decatur, Illinois, after traveling halfway around the world on a merchant ship.

He was a Navy gun crewman aboard the ship during World War II and between experiences of dodging Nazi submarines and air attacks he "visited" such points as Odessa, Russia, Istanbul, Turkey, Romania, most of Europe and Africa.

A short time after returning to civilian life, Ross joined Mueller Co. and was assigned to our Shipping Department as a material handler. His starting day with our company was September 11, 1946.

He has come a long way since then, and today holds the position of first assistant to A. O. Yonker, assistant sales manager, water division.

The first three and one-half years with our firm saw Ross gaining valuable experience in the shipping room. Following his first job as material handler, he served as packer, marker and weigher and order picker. These duties acquainted him with our many products and enabled him to better carry out his duties with the Sales Division when that opportunity arose.

Ross joined the Sales Division in February, 1950, as an order drum clerk. Less than a year later, he was promoted to assistant order interpreter, and in November, 1951, he was named second assistant to Mr. Yonker.

Further advancement came for Mr. Caylor when, in November, 1952, the position of first assistant to Mr. Yonker became available and he was named to that post.



**ROSS CAYLOR**

**Sales Division Assistant  
Water Department**

The majority of our customers are familiar with correspondence written by Ross Caylor. His principal duty is the handling of business letters with customers and Mueller Co. sales representatives. He assists our sales representative and gives our representatives and customers information on prices, products, product applications and shipping information.

He recommends to customers, when called upon, what Mueller Co. products should be used on a particular job.

Mr. Caylor was born in Decatur and is a graduate of Decatur High School. He is married and has two children, a son and daughter.

He has but one hobby, he says, and that takes considerable time and effort; yet it has proven to be both pleasurable and profitable. He is avidly interested in nursery work and spends most of his summer evenings working with trees, shrubbery and landscaping. His hobby has come to the attention of many Decatur home owners who have called upon him to beautify their lawns.

# Toledo Water Department Discovers Unique System of Rating TV Shows

BY ALAN SCHOEDEL  
Toledo Blade Staff Writer

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Radio has its Hooper Ratings, Hollywood has its box-office polls, but if the television industry wants to keep tabs on the popularity of its programs, let it consult the Toledo waterworks.

George J. Van Dorp, water commissioner, claims he can measure the appeal of a TV show by means of the fluctuations he has found in the water pressure during the evening. The pressure remains high during a television program, while everybody is sitting quietly watching, but suddenly drops at the end of a program because—guess what—so many persons get up and go to the bathroom at the same time.



GEORGE VAN DORP, commissioner of water, Toledo, Ohio, Water Department, has discovered a unique system of rating the popularity of television programs in the city of Toledo. His "P" rating system has been nationally publicized in recent months.

Back in 1951, the water department began to be troubled seriously by sharp, sudden and unexplainable variations in the demand for water during an evening.

Consumption would fall off to an unusually low level for a while and then, in three or four minutes, it would zoom upward. Pressure in the mains would fall accordingly.

When this happened, the alarmed and puzzled crew at the Collins Park pumping station would throw another big pump into action. Minutes later the use of water would unaccountably drop below normal again, and the extra racing turbine would have to be turned off.

By summer of 1952, the trouble had become acute. It was costly in wear and tear on water department equipment, nerve-wracking for the pumping station crews.

Complaints of low pressure were received frequently from industrial plants. The flow of water to cool such machinery as metal presses or die-casting equipment, or for use in air-conditioning, would suddenly go down to a comparative trickle.

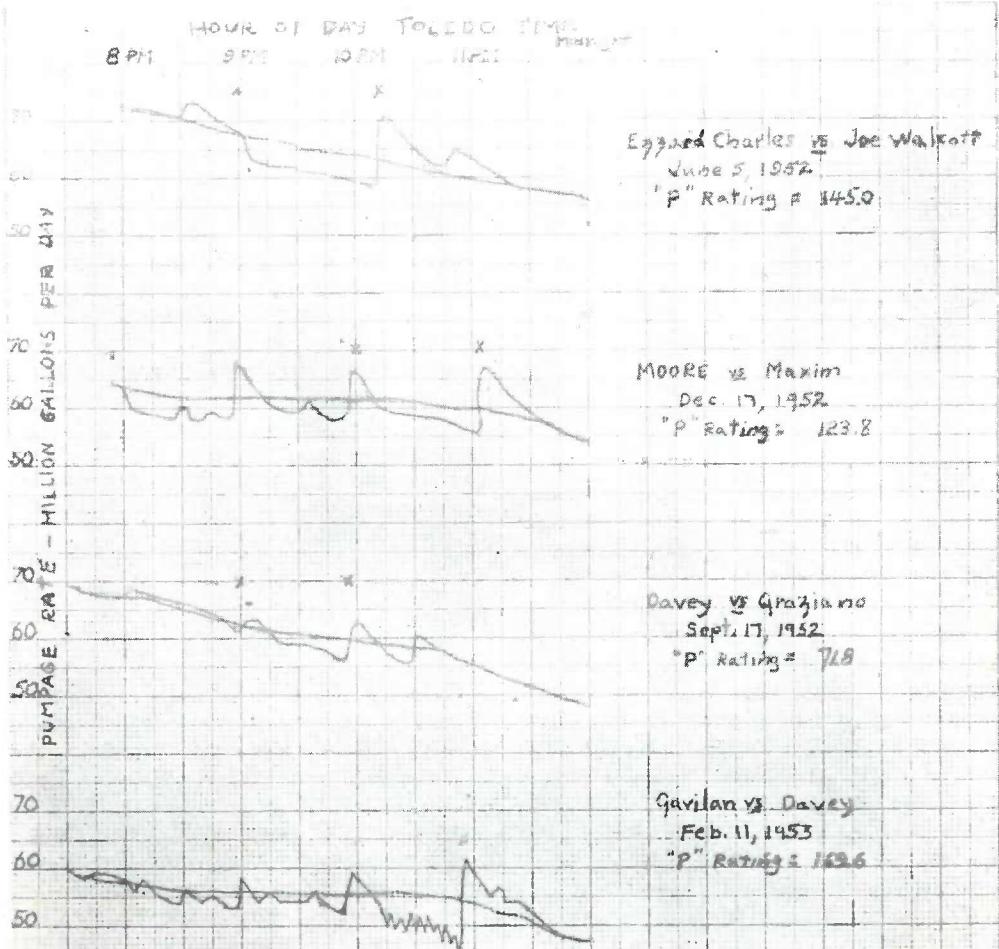
Mr. Van Dorp assigned two investigators to find the source of the trouble. Were some big industrial plants, perhaps, using great quantities of water on an erratic schedule?

Armed with gauges, the trouble-shooters tested pressure in mains throughout the city. The fluctuations were there, all right, but they seemed to be everywhere in the system. The cause just couldn't be localized.

Baffled, they went back to Mr. Van Dorp's office with their findings. Further close study of the records showed one thing. The ups and downs occurred at intervals of a half-hour or hour.

Truth dawned on the water officials.

"We had found the culprit at last," Mr. Van Dorp related. "It was television."



This graph shows that the Kid Gavilan-Chuck Davey championship match on February 11, 1953, was the biggest televised sports attraction in history, according to Mr. Van Dorp's "P" rating system. It held far more Toledo viewers than three other top-notch battles whose TV popularity is shown by the graph.

What happened was that families all over Toledo would stay close to their television sets while a good program was on. When it ended and the between-program commercials came on, they would get drinks or give the last of the dinner dishes a hasty scrubbing before the next show. But the largest use unquestionably, Mr. Van Dorp says, is that of bathroom facilities which use an average of eight gallons for each operation.

For example, at the start of "I Love Lucy"—top program on TV by the Van Dorp rating system—one night recently, the rate of water consumption went down 13.8 per cent from the normal pumpage line. In the space of about five minutes when the program ended,

it shot up 22 per cent over the low, showing a brief net gain in use of 8.2 per cent.

On another night, pressure in the water mains in Point Place—hardest hit by these fluctuations—dropped 30 per cent in a matter of minutes because so much water was being used.

At the Collins Park pumping station, a needle moving over a slowly rotating disc traces throughout the day the rate, in millions of gallons, at which water is being pumped to keep the mains full. It shows with fascinating accuracy the public reaction to a program right down to the commercials.

For example, on a recent TV "fight night" the gallonage dropped off at 10

p. m. when the boxing bout began, but spurted upward when the fight ended, well before 11 p. m., instead of on the hour.

Water consumption was generally low during the hour-long drama telecast on Sunday night, January 18, between 9 and 10.

But about 9:20 it rose 6.5 per cent for just a couple of minutes. About 9:40 there was a similar brief upward swing of 10.5 per cent.

"Those are the commercials," Mr. Van Dorp explained. "People left their sets while the commercials were on and used water in various ways."

Evidence convinced the water commissioner that Ed Sullivan's show, "Toast of the Town," is a "slow starter" because of the rather lengthy commercial at the beginning.

Water use drops off slowly at the start of this program, and Mr. Van Dorp attributes this to the fact that people know there is going to be a long introductory announcement and advertising talk, just as they know that if they miss the first act of such a variety show it won't affect the continuity for them. By contrast, a show like "I Love Lucy" demands—and gets immediate attention right from the start.

"The men at the pumping station get a laugh out of those pressure changes now," Mr. Van Dorp said.

"They know what shows are coming up on TV, and they can tell in advance what's going to happen. They know the abnormal demand will last only a few minutes, so they don't turn on one of the extra pumps.

"We still get some complaints about pressure, of course, but there's nothing we can do and we just tell the people what the reason is. We used to be worried over whether we were negligent in some way that we couldn't understand."

Using the data available from the department's charts, Mr. Van Dorp worked out his rating of TV shows.

Like the true pollster, concerned with medians and weighted averages and variable factors, Mr. Van Dorp has devised a formula which can be applied by waterworks engineers in other cities with the same problem to give ratings to TV

programs affecting pressure. His formula checks "Program Popularity through Pumpage and Pressure," which Mr. Van Dorp has shortened to "P Rating."

He recognizes that in Toledo the formula is simplified because there is only one television station there. He also makes allowance for the fact that the proportion of water going to private homes rather than industry varies in different cities—that's important to the rating.

Supporting Mr. Van Dorp's theory is the experience of the Detroit superintendent of water, L. G. Lenhart. He said that any popular show or special event that would attract attention to television or radio caused a "terrific bump" in the pumping rate.

His department, he said, had drawn up its own charts showing relative popularity of events and shows.

That this is the first time the theory has been expressed publicly was confirmed by W. A. Hardenbergh, one of the editors of Public Works Magazine in New York. He had first heard of the explanation, he said, from Mr. Van Dorp at a meeting of waterworks technicians in Cleveland. A paper of Mr. Van Dorp's was published on the water use fluctuation in the magazine, he said.

Just one thing, Mr. Taxpayer, Mr. Van Dorp wants it known that he worked out the formula on his own time.

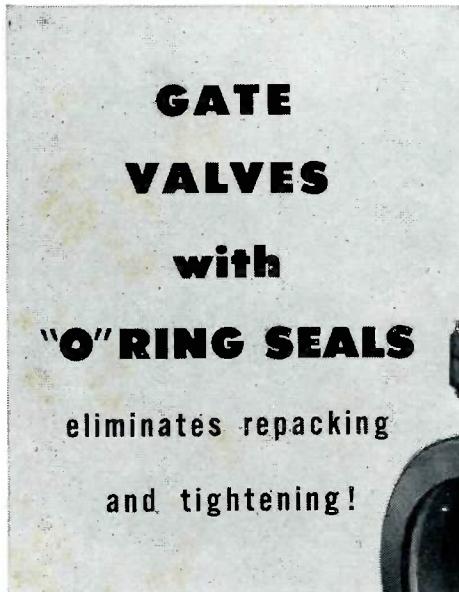
## Frederick, Md.

(Continued from Page 18)  
removed. The machine is centered as nearly as possible in relation to the pole and fastened securely to the main.

Both workmen must move quickly during this next step. One man is holding the pole and one is with the tapping machine. The pole is removed as quickly as possible and the flop valve shut equally as fast. The rest is normal tapping procedure.

I might add that if the ditch will not hold water to act as its own baffle, someone is going to get wet trying to insert the sharp end of the pole into the main. It is also well to tap a size larger hole to compensate for not placing the Mueller B machine perfectly centered over the hole.

# MUELLER®



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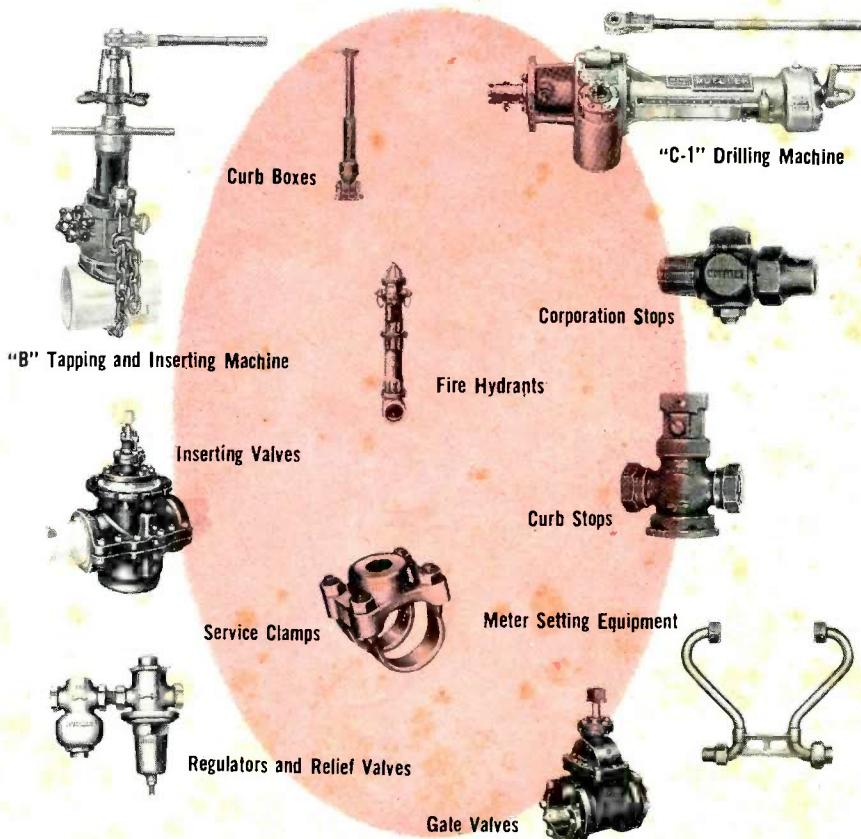
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*Dependable Since 1852*

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