MUELLER RECORD

SEPTEMBER • 1948 • OCTOBER

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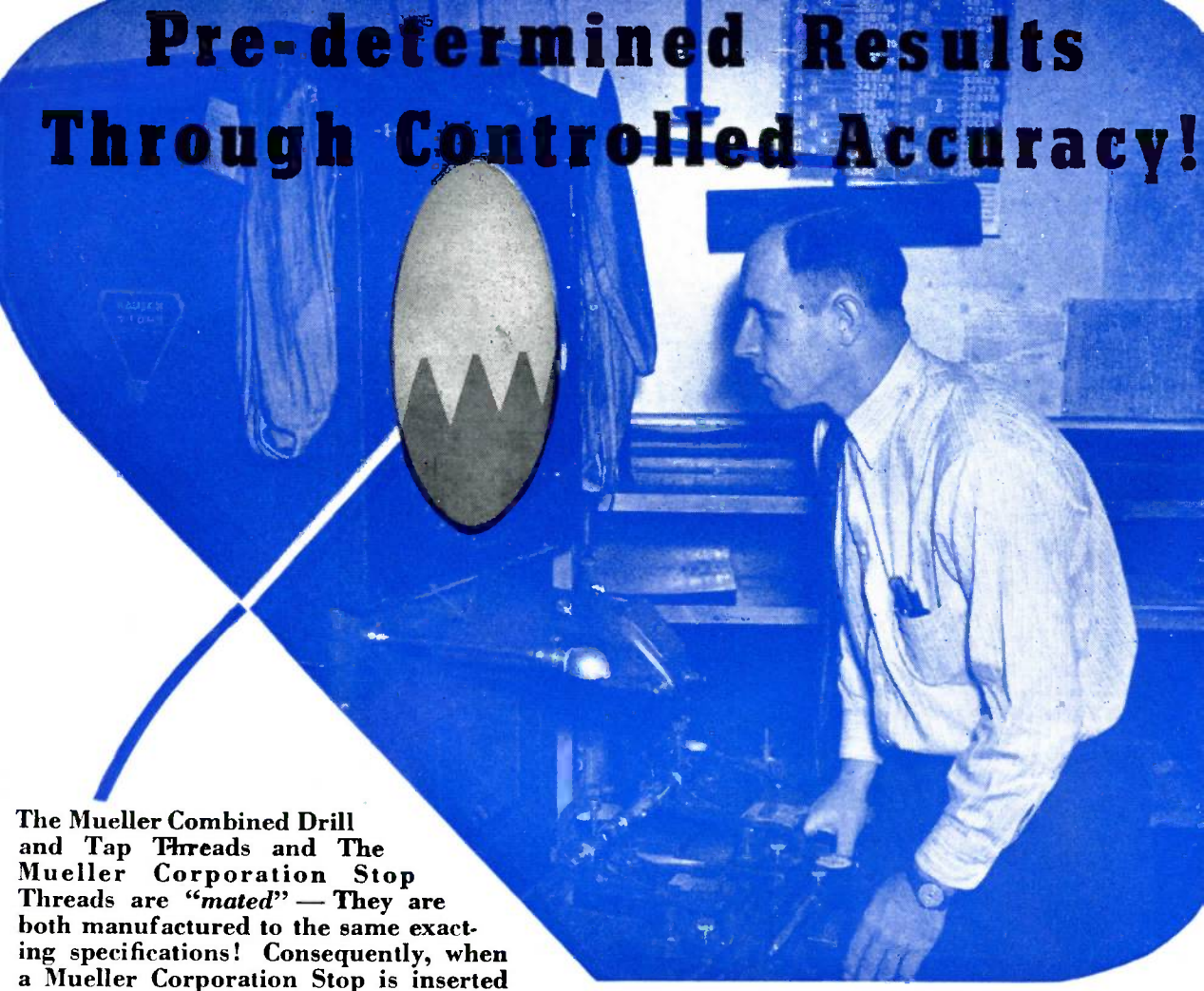
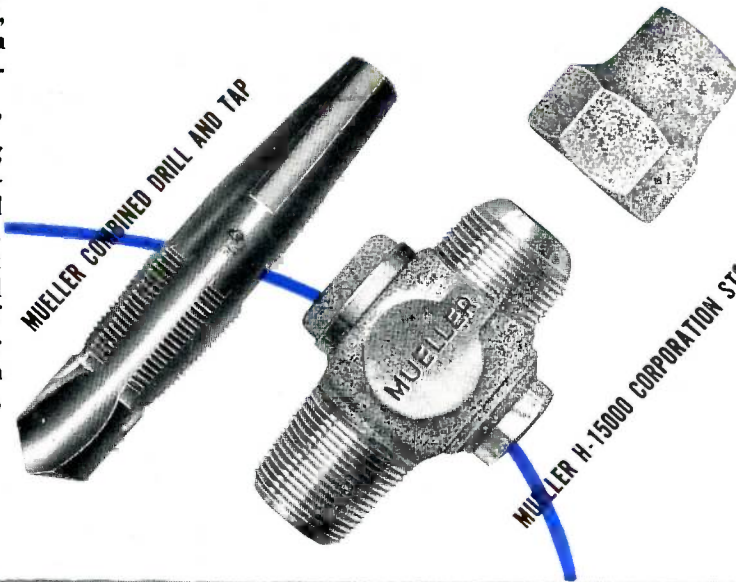


The Mueller Combined Drill and Tap Threads and The Mueller Corporation Stop Threads are "*mated*" — They are both manufactured to the same exacting specifications! Consequently, when a Mueller Corporation Stop is inserted by means of a Mueller Tapping Machine, you are assured of accurate alignment, easy run-up to engage the maximum number of threads, and a lasting, leak-proof joint.

This assurance of easy "*in the field*" installation, plus the dependable, lasting connection, are some of the many reasons why most water works men depend upon Mueller equipment and products. Before you install or replace your next Corporation Stops, be sure you know all about this dependable combination of The Mueller Tapping Machine, Mueller Drill and Tap and Mueller Corporation Stops. Ask any Mueller Representative, or write us direct.



DEPENDABLE SINCE 1857 — FULLY WARRANTED OUR 91st YEAR

MUELLER CO.

MAIN OFFICE AND FACTORY.....DECATUR, ILLINOIS

OTHER FACTORIES: *Los Angeles, Cal.; Chattanooga, Tenn.; Sarnia, Ont. Canada*

MUELLER RECORD

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GENE J. KUHN, Editor

CONTENTS

COVER
Harold M. Lambert Studios

MOSTLY PERSONAL

WE HAVE BEEN holding a clipping from *The Chattanooga Times* concerning Al Porzelius, manager of the City Water Company of Chattanooga, until an appropriate occasion presented itself. We met Mr. Porzelius on a recent trip to Chattanooga, and although he is a former Missourian while we claim Kansas as our native soil, we can at least vouch for part of the comments of *The Times* editorial, which appeared following an article in a national magazine questioning the purity of public water supplies:

" . . . Not so in Chattanooga. Mr. Porzelius, engineer, classician, linguist, philanthropist, scientist, and beau ideal of cleanliness, serves this community with all the water that's fit to drink. We have tried it plain and in mixtures. It's good in a glass or in a bathtub and a fit companion for Old Granddad, Jack Daniel or any other nerve tonic."

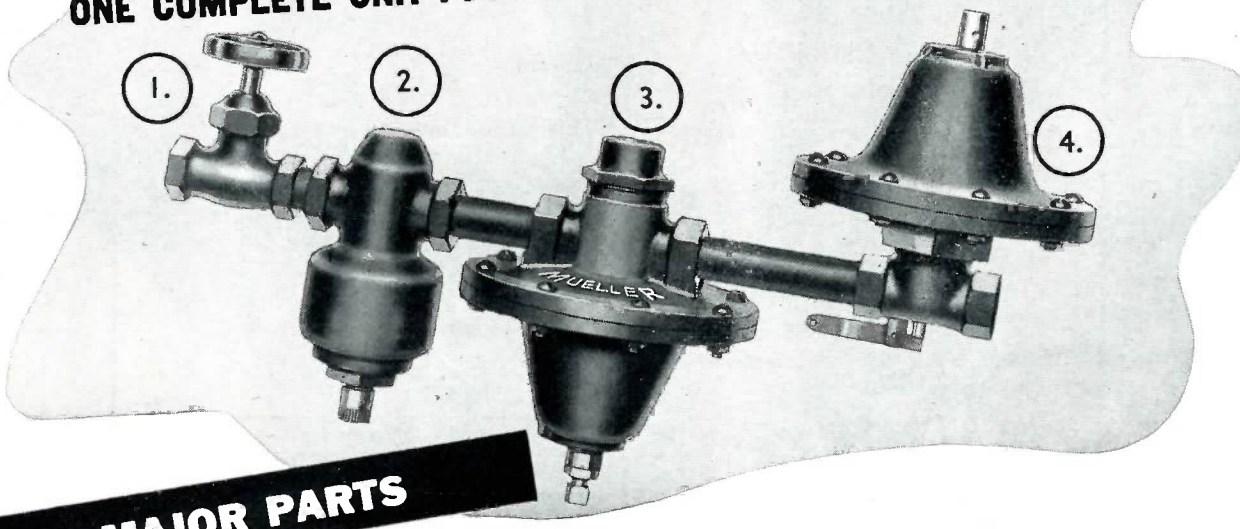
Mr. Porzelius also seems bent on making a name for himself as a song and dance man for his part in Chattanooga's Junior League shindig. We can only hope that *The Times* will be as complimentary in its reviews of his latest activity.

We feel fortunate to have articles on the water systems of Chattanooga and Baltimore in the same issue. Both Mr.

(Continued on page 20)

MUELLER H-9500 SYSTEM OF HOT WATER HEAT CONTROL

ONE COMPLETE UNIT . . PRECISELY BUILT FOR PRECISE CONTROL

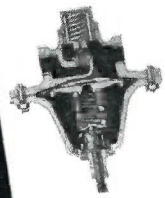


MAJOR PARTS

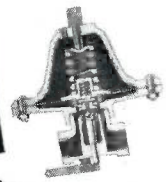
1. Stop and check valve of rugged construction is designed to give full flow, or positive shut off, and prevent back flow of water into the supply line.

2. Reliable strainer with large screen area and large sediment chamber, cuts down maintenance costs, and pays for itself by protecting the entire system.

3. Pressure reducing valve, because of extra large diaphragm area, maintains accurate constant setting.



4. Dependable relief valve because of extra large diaphragm is extremely sensitive, and is equipped with a test lever for testing or flushing.



The MUELLER H-9500 system of hot water heat control is your assurance of customer satisfaction. One complete unit expressly designed to give an automatic supply of water, and automatic relief of pressure year, after year, after year, all without attention or adjustment. Long-lasting operation because all working parts are made of bronze. The extra large diaphragms are extremely sensitive and the positive valves assure absolute safety.

It is more profitable for you to install the MUELLER system and give your customers dependable, trouble-free operation.

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Chattanooga—now a modern, busy industrial city—has a rich historic background.

Chattanooga's City Water Company

By A. F. Porzelius, *Manager*

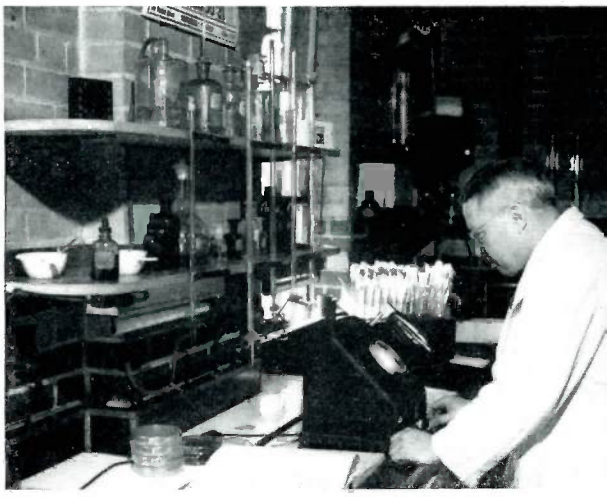
Today's modern water system dates back to 1863, during the occupation by Gen. U. S. Grant's troops.

CHATTANOOGA'S WATER supply was born during the thunder of battle in the War Between the States. During the Union occupation of the city in 1863 the source of water, consisting of springs, wells and cisterns which had been supplying the needs of the small community, was found inadequate to supply the needs of the Union troops, and General U. S. Grant erected a pumping station on the banks of the Tennessee River and a tank on the side of Cameron Hill, which were connected with about a mile of 6-inch cast iron pipe. This pipe was charcoal iron pipe, and it was imported from England. Some of this pipe is still in service.

After the close of the war the system was purchased from the government by E. Yardley & Company, which operated it for a short time but failed, and after two years of litigation the property was sold to George H. Hazlehurst, A. M. Johnson and others who organized the Lookout Water Company to serve the population, which then numbered about 3,000. This company built a reservoir on what is known as City Water Company's Reservoir Hill Addition, and a pumping station at the foot of Pine Street to pump raw Tennessee River water. It expanded the main system laid out by the Army engineers and provided fire service, in addition to the regular water service for the people of the community.

In 1887 the Lookout Water Company was bought by the American Water Works & Guarantee Company of Pittsburgh, the predecessor of the present company, and this company immediately began construction of a new pumping station at the mouth of Citico Creek, the site of the present Citico Pumping Station. The reservoir was constructed on the side of Missionary Ridge, and many miles of mains were laid to meet the needs of the rapidly growing city.

A. F. Porzelius, manager of Chattanooga's City Water Company since 1926, looks over pressure charts from the system's stations.



Quality of Chattanooga's water is carefully controlled through laboratory tests. Here C. V. Swearingen makes a bacterial plate count.

About this time the Mountain Spring Water Company was organized to bring water from a spring on the north side of Lookout Mountain, as this was generally clear water, whereas the Tennessee River was quite turbid at times. Shortly after, the Mountain Spring Water Company and the Lookout Water Company were combined to form the present City Water Company of Chattanooga. This spring became polluted and was abandoned in 1911.

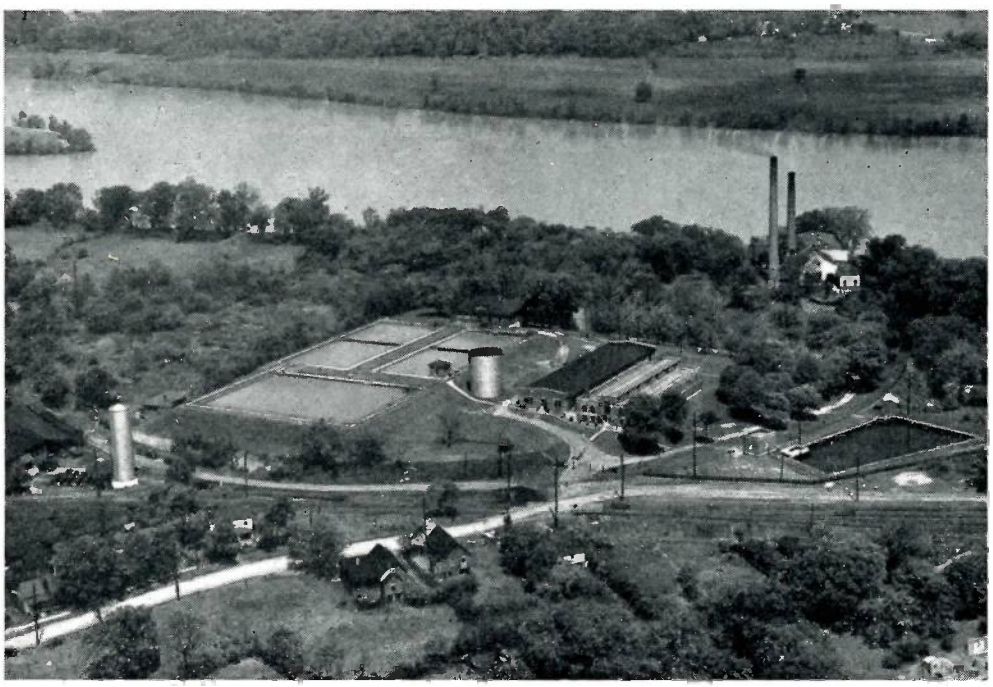
During the early 90s the City Water Company, realizing the necessity of providing a better quality of water to the inhabitants of the city, began construction of filters and settling basins just south of the Citico Pumping Station, and Chattanooga was one of the first cities in the South to have been provided with a filtered water of unsurpassed quality.

In 1888 about 1,500 consumers were served through a pipe system of approximately 20 miles, and the pumpage was about 2 MGD. However, none of the consumers were metered at that time. As an example of how the picture has changed, today one consumer uses approximately 5 MGD and the present 37,000 consumers are served directly through a pipe system of 550 miles, with an average pumpage of 30 MGD. In addition, the company supplies water at wholesale rates to the Town of Signal Mountain and to the following Utility Districts: East Brainerd, Hixon, Fairview, Chattanooga Valley and Lookout Valley, which, in turn, supply approximately 5,000 consumers through their main systems. The company and the wholesale districts are all 100 per cent metered.

Such growth requires continuous planning, and the City Water Company is always looking to the future to insure an adequate water supply to the citizens of Chattanooga and the surrounding territory. During the past year, a new low service pump has been installed at the Citico Pump Station and many miles of mains, from 2-inch to 30-inch in diameter, have been added to the system. Of course Mueller valves, fire hydrants and service materials play an important part in this program.

A new 1,000,000 gallon reservoir just has been completed to supply the territory east of Missionary Ridge and an additional 1 MGD pump provided in the East Ridge booster station. For the territory lying north of the Tennessee River a new 1½ MGD pump has been installed in the North Chattanooga booster station, and a new 400,000 gallon standpipe erected in the Red Bank area, together with two new booster pumps in the new Red Bank booster station. In addition, a pressure tank booster system has been installed to serve the extremely high section in what

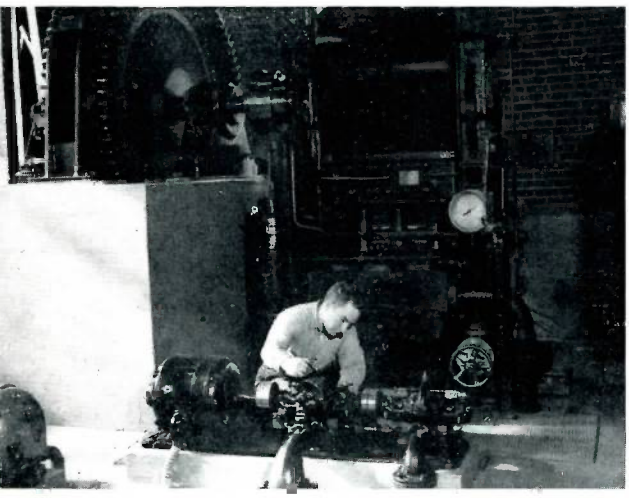
An interior view of the City Water Company's No. 3 filter building. Chattanooga, Mr. Porzelius points out, was one of the first cities in the South to have been provided with filtered water.



This aerial view shows the Citico pumping station and filtration plant on the Tennessee River. Average pumpage totals 30 million gallons of water a day for 37,000 customers.

This is a view of an installation of Mueller Co. gate valves at the 30-inch low header discharge of the Citico Pump Station.

A Mueller C-C drilling machine and tapping sleeve and valve are being used to cut a 24-inch main for a fire hydrant installation.



Dewey Orton, high service engineer, oils the St. Elmo booster pump. Background: Lookout Mountain pump—216 GPM at 650 PSI.

Foreman Bill Evans and Serviceman Percy Rawls making a tap in a 6-inch cast iron main, using a Mueller B tapping machine.

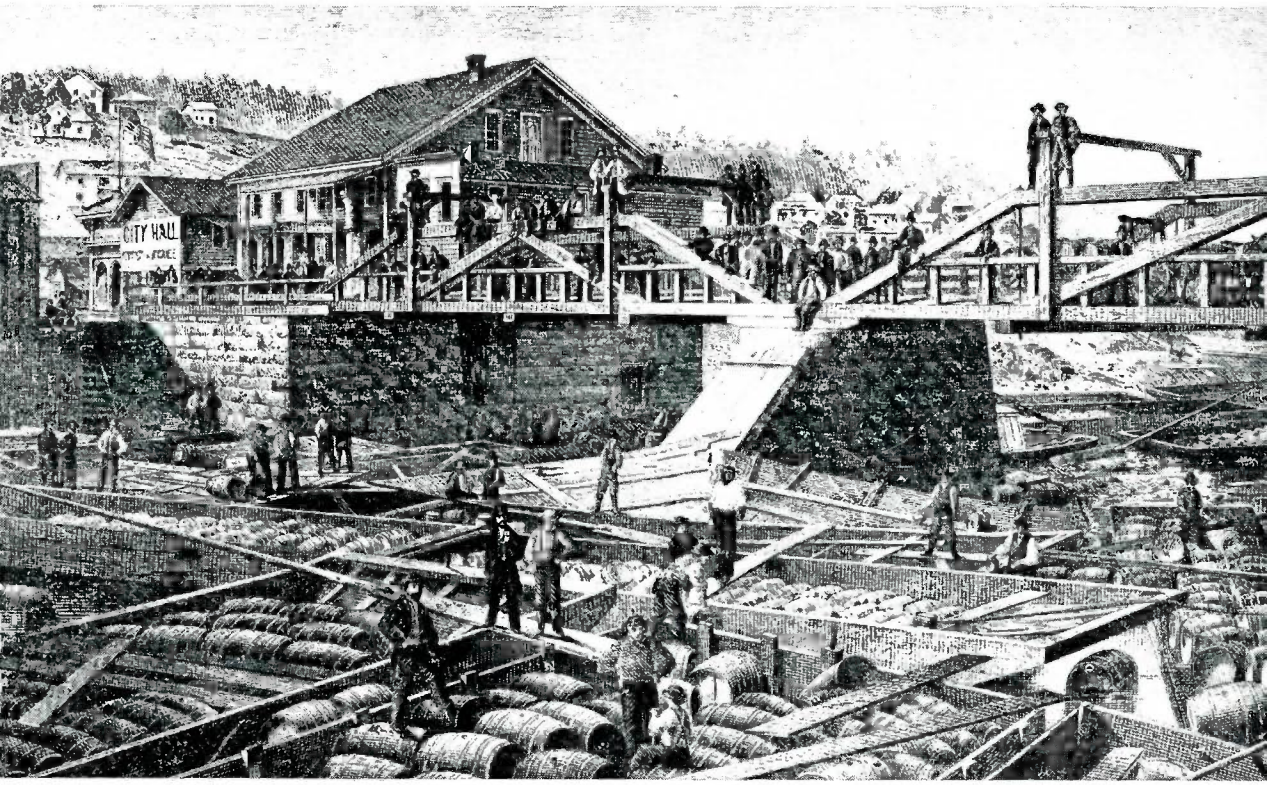
is known as the Stuart Heights area.

Work is underway at the present time in installing new centrifugal pumping equipment in the Lookout Mountain-St. Elmo booster station, the St. Elmo pump being 550 GPM and the two pumps for Lookout Mountain being 450 and 380 GPM.

Plans are now being prepared for a new settling basin and four additional 2 MGD filters, which will give a nominal filter capacity of 40 MGD.

While Chattanooga is one of the scenic spots of the country, its rugged topography multiplies the distribution problems for the City Water Company, for in addition to the Citico Pumping Station, which is the main pumping station, there are ten additional booster stations to supply the areas which cannot be served directly from the main pumping station.

Chattanooga and its environs has a population of approximately 200,000 people who work in its almost 500 industrial plants, which produce approximately 1,500 different types of articles.



BETTMANN ARCHIVE

The water thoroughfare for the western Pennsylvania oil fields was Oil Creek. The creek was dammed, a flotilla of loaded barges assembled, and the impounded water suddenly released. The result was something to see, and entire villages turned out to watch the oil navy's drives.

Getting Out The Crude

Hard-driving, $30-a-day crude skinners forcibly blocked the laying of the first oil pipe lines.

ONE OF THE MOST rough and tumble chapters in America's development was enacted between the time the first commercial well drilled for oil was completed and the laying of the first pipe lines in the western Pennsylvania fields during the 1860s.

When, on August 28, 1859, Uncle Billy Smith, driller for "Colonel" Edwin Laurentine Drake, found oil rising in the well he had drilled to a depth of a little over 69 feet, a new era was born. Oil had been known for many years prior to Uncle Billy's discovery, and it had been collected by soaking blankets at seepages and as it floated on slow moving streams. The Drake well proved the practicality of drilling for it.

The success of "Drake's Folly," as the well was known locally, precipitated a mad rush for the oil bearing lands, first at Titusville and along Oil Creek, then throughout the entire area.

Wells were sunk as rapidly as possible. It had taken Uncle Billy 98 days to locate oil for Col. Drake, but new records constantly were being set as the fever for oil, with its promise of immediate riches, swept through the fields.

At first the scramble was for the purchasing or leasing of land, then came the drillers, and the boom was on. Small, peaceful villages overnight became jerry-built cities, abundant with hastily erected flop houses and saloons. The more serious-minded citizens claimed that the

BETTMANN ARCHIVE

Hard-driving teamsters succeeded the bargemen as the search for oil spread away from Oil Creek. Their opposition to the new-fangled pipe lines was intense, for at $1 a barrel they were among the highest paid workers in the fields. Armed guards kept the first pipe line flowing.

flow of whisky into their towns exceeded the outward flow of the producing wells.

Indeed, getting the oil to the seaboard refineries was as much a problem as locating a clear lease and putting down a well. Barges supplied the first solution to the transportation problem. In times of high water the oil navy did a fairly creditable job; but getting the heavily loaded boats down creeks and rivers in times of drought was another matter. The rivermen were a breed apart, a brawling lot, but ingenious and daring. Dams were built, the barges loaded, and the impounded water suddenly released. When the flood struck, the boats were picked up and carried to their destination—with luck. These drives were exciting enough to attract entire villages for mammoth beer and barbecue picnics. In many instances, the bargemen had their last drink at these affairs, for the drives were risky and often disastrous.

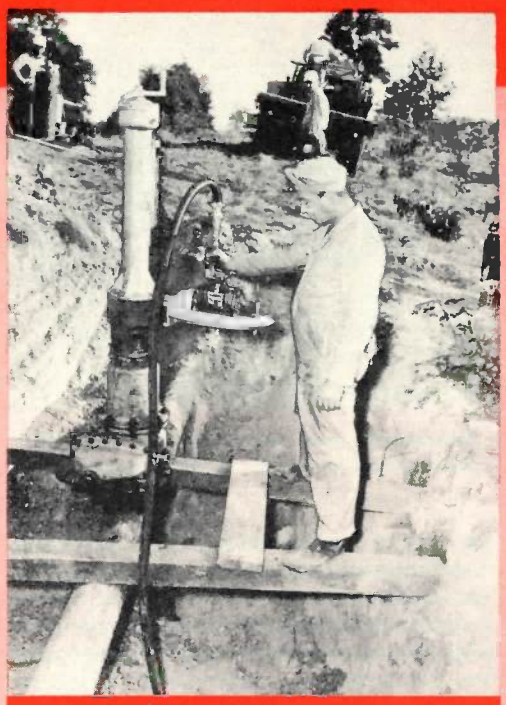
The search for oil spread away from the Oil Creek valley, and another means of transporting the crude to the railheads had to be found. The boatmen were succeeded by "crude skinners," burly, hard-living, hard-driving men who made around $30 a day, compared to the $2 a day commanded by other teamsters. Skinning teams of mules and horses over the muddy, rutted oil field roads with five 42-gallon barrels of oil (at $1 a barrel full, 25 cents each empty) as a payload was a trade to attract only the toughest—and most profane. Skinning became a rugged contest of survival of the fittest, and there were plenty of challengers.

Delivery of the oil to the railhead was only the start of freight tariffs, for the crude then had to be transported to the seaboard refineries. This naturally led to a consideration of less expensive means of transportation. In 1860 General S. D. Karns, one of the first to visualize the importance of a pipe line,

(Continued on page 20)

Phillips 66 finds another job for...

MUELLER EQUIPMENT



A Mueller C-I machine cuts into the Phillips line on the upstream side of river crossing.

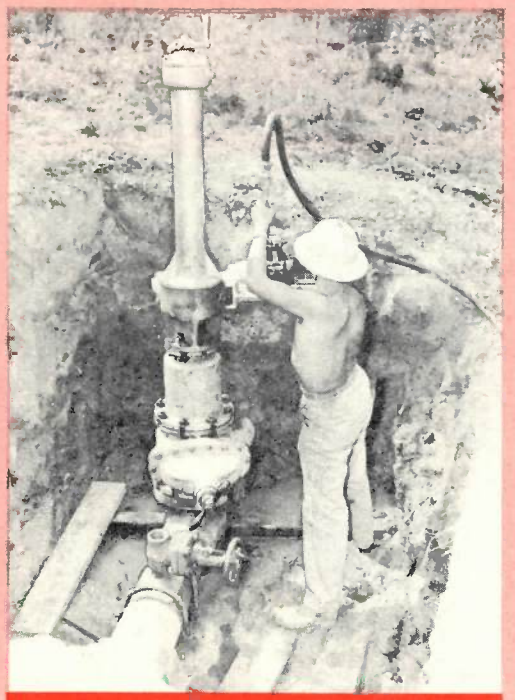
WHEN PHILLIPS PETROLEUM Company recently installed insulating flanges at one of the river crossings of its products pipe line, Mueller Co. line stopper equipment and fittings were used to stop the flow in the line, which was carrying gasoline at the time, while the line was severed and the insulating flanges put into place.

Installation of the flanges was part of the company's long-standing battle against corrosion, the effects of which account for a large slice out of appropriations for all pipe line maintenance departments.

So far as pipe line companies are concerned, a little electricity goes a long way. As a matter of fact, it's probably the major cause of pipe line corrosion.

Pipe lines pick up stray currents of electricity from the soil, from power transmission lines, railways and other sources, and the current is cumulative—that is, it builds up its strength as it travels along and meets up with other currents. So long as it is content to ride the line, little difficulty is experienced. Trouble comes when the current skips off for parts unknown, taking with it a certain amount of pipe line metal. Pitting results at first; then leaks develop.

Pipe line engineers have long known that the current has a greater tendency



Another cut is made in the line a short distance away, first step in isolating section.

Next the stopping machine is bolted on and the stopper seated, halting the line's flow.

Tapping the line with a Mueller D-4 drilling machine to empty the line of gasoline.

to leave the line in wet locations, such as river crossings, and therefore are able to combat the condition effectively before extensive damage has been done.

Several methods have been devised to eliminate or materially reduce the damage caused by anodic action, including the use of insulating flanges. In effect, the insulating flanges electrically isolate the section of line under the river, where a good contact naturally would be present, and thus prevent the current present in the line on each side of the crossing from reaching a point that would be

With the flow stopped and the line empty, a pipe cutter is used to sever the line.

An oxy-acetylene torch is used to cut away a small section of the line for the flanges.

The insulating flanges are then welded into place, isolating the crossing electrically.

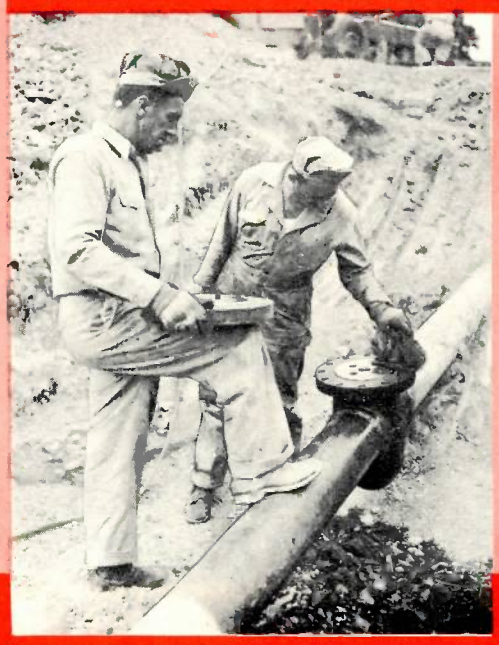
Third phase of the job with Mueller equipment is the use of the completion machine.

ideal for corrosive action.

The value of the current the isolated section of the line can pick up at the river crossing is limited to the length of the crossing itself. Magnesium anodes are installed to reverse the direction of this minute amount of current, causing the current to flow into the pipe instead of away from it. The magnesium anodes, which are replaced periodically, are sacrificed for the line's protection.

The Phillips products line originates at Borger, Texas, and terminates at East Chicago.

The machine inserts the threaded completion plug in the Mueller welding fitting.



After the plug has been tightened, the completion cap is bolted on, finishing the job.

The Case of Decatur's Missing Water

ENGINEERS OF THE Pitometer Company under the direction of Warren & Van Praag, Inc., consulting engineers, have been called in to help solve the case of Decatur's missing water, which has been running about 50 per cent of the city's total pumpage.

However, the Pitometer engineers consider themselves auditors instead of sleuths, since it is their purpose to account satisfactorily for the amount of water supplied to the distribution system. Actually, their work is a combination of both, for a vast amount of detective work is necesssary to learn what is happening to the water after it leaves the pump station.

Decatur's water system is 100 per cent metered, except for water for public use, which in this case includes a city-county hospital, governmental buildings and an extensive park and recreational system. But Commissioner Bushrod Sattley, Marvin Cazier, superintendent of distribution, the Pitometer engineers and Warren & Van Praag, Inc., have reason to believe that there's more to the story than that.

E. Shaw Cole, chief engineer of Pitometer Co., and V. B. Ferguson, field engineer, are shown with flow and pressure instruments.

Mr. Ferguson demonstrates how the Pitometer rod meter bar is inserted in a main through a 1-inch Mueller corporation stop.

For one thing, the engineers point out that the Illinois city has what is considered a large night rate of flow and that the ratio of the minimum night flow to the total consumption is an indication that leaks exist.

The Decatur survey is being made in two parts: (1) a systematic water waste survey, and (2) a trunk main survey. Briefly stated, the method of conducting a water waste survey consists of dividing a water system into small districts by closing boundary valves, and measuring the 24-hour water consumption in the district through the one main selected to supply the district's water. Next step is the night subdivision of districts during the hours of minimum flow—between 1 and 4 a.m. Sections of the district are shut off for short times while a Pitometer records the flow. In cases where the flow is large, there is an indication that leaks are present.

The trunk main survey is made for collecting data in regard to the flow of water in the various trunk mains and principal distribution feeders of the system. The work is divided into two parts—the measurement of flows under operating conditions, and the determination of the loss of head by friction in the various sections of main. A simultaneous 24-hour measurement of the flow of water at each end of a section is made under normal operating conditions with all valves open, and at the same time gaugings are made on all important side connections. These measurements give the maximum and minimum rates with hours of occurrence, direction of flow and the total quantity of water used during the period.

E. Shaw Cole, chief engineer of the Pitometer Company, said it was often found that the direction of flow in mains is opposite to what might be expected, that there is no flow in the main, or that a reversal of flow occurs at certain times.

In making the survey, Mueller B machines are used to drill and tap the mains and to insert Mueller 1-inch corporation stops under pressure. Instruments are then inserted into the main through the corporation stop. The stops remain as a permanent installation, and may be used later on to make additional surveys. Between 50 and 60 taps will be made in the Decatur mains during the survey.

As the survey progresses, these instrument shelter houses are becoming a familiar sight in almost all sections of the city.

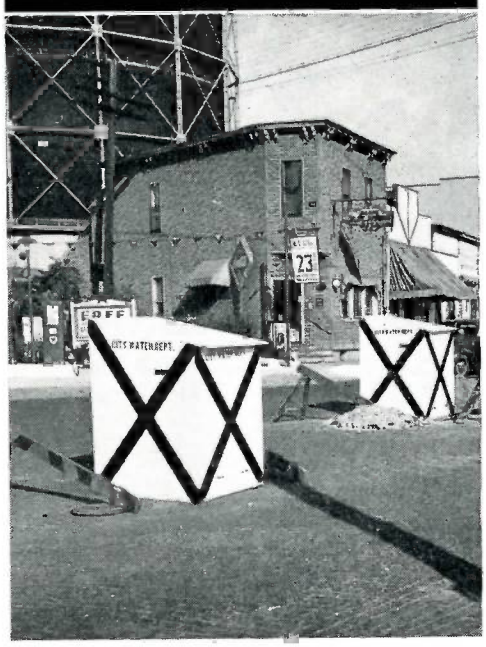
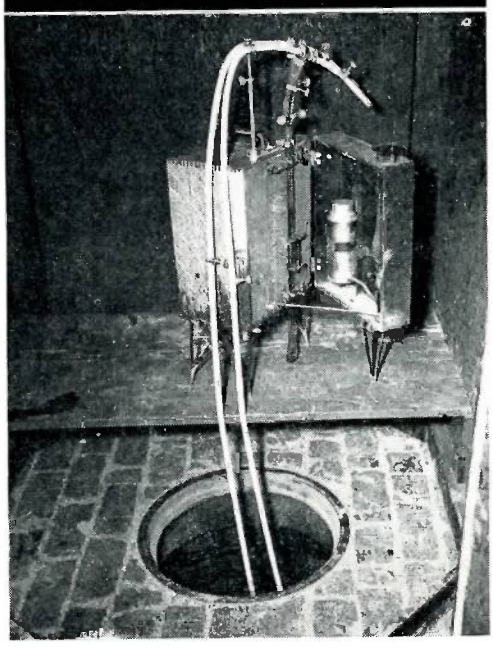


Photo recorders are set up in the shelters to keep a record of the 24-hour gaging of the flow of water in the main being studied.



Baltimore's Water System

A $100 million plant was started 151 years ago with an appropriation of $1,000 to install public pumps.

FROM A $1,000 appropriation for public pumps in 1797, a year after the city was incorporated, Baltimore's water supply system has grown into a huge concern with physical assets which now have an estimated value of $100,000,000 — and it's still growing.

Leon Small

Baltimore, founded in 1729, had a population of about 15,000 and was already noted for its commerce and shipping at the time of its incorporation. The first pumps, which the city council had installed in recognition of the need for a public water supply for domestic use and fire protection, were an improvement over the wells and springs privately used, but they were inadequate to meet the requirements of the young and rapidly growing city.

A committee was appointed "to view the springs and streams in the neighborhood of Baltimore and report the practicability of conveying the same to the city." However, in 1799, when the committee made its report, the municipality was financially unable to follow through on its recommendations.

A lottery, authorized by the council, was held to obtain the necessary finances, and plans were drawn up for improvements, but little was actually accomplished until 1803, when a commission was authorized to collect the springs that formed Carrolls Run and pipe the water into the city by gravity flow. Opposition to this plan developed, and it was abandoned.

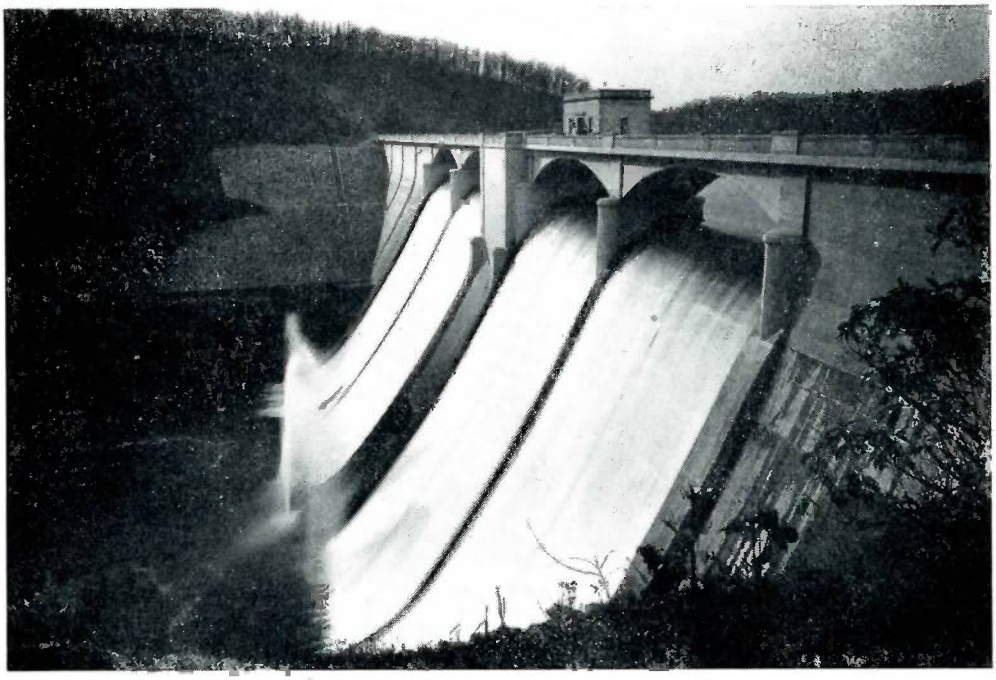
On April 20, 1804, a meeting was held which resulted in the formation of a stock company which was incorporated as the Baltimore Water Company in 1806. Storage reservoirs were built, land acquired near a source of supply, and wooden mains laid.

By 1830 the private company offered to sell its system for $350,000, exclusive of real estate. The city declined the offer. Other offers were made, but the city still held out. Meanwhile, the Baltimore Water Company was growing with the city, and in 1852, when it made still another offer to sell, the asking price was $1,250,000. It was not until August, 1854, that the deal finally was closed. Final selling price was $1,350,000.

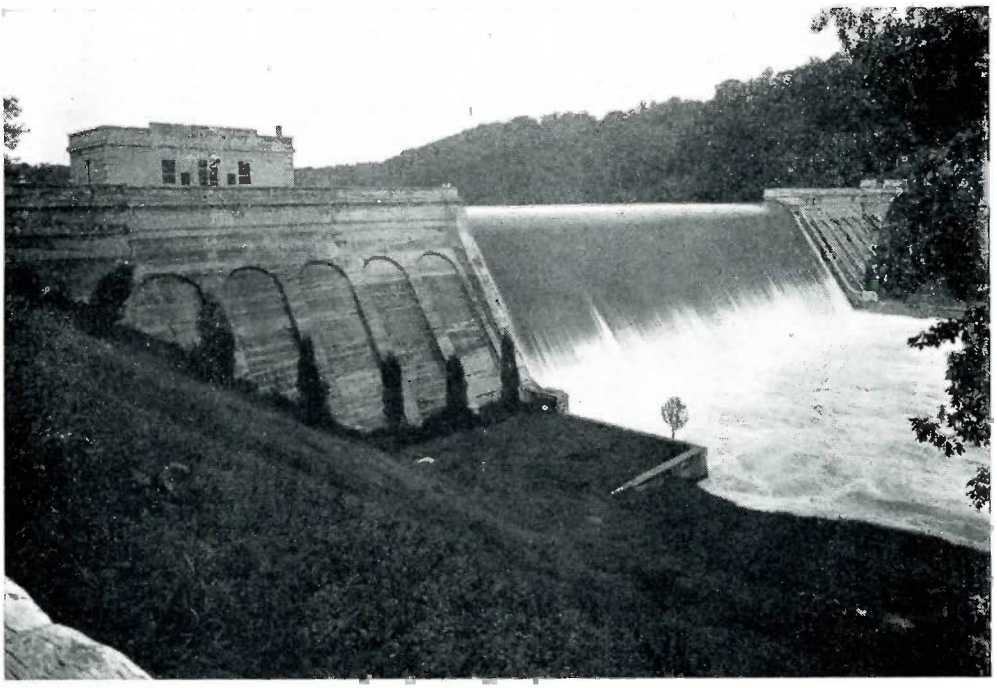
A board of three water commissioners, established by ordinance in December, 1854, was set up to manage the newly-acquired system. Three years later the board was reorganized, and the city's first water engineer, James S. Suter, was appointed. Between the administrations of Mr. Suter and Leon Small, the incumbent and the fifteenth man to head the Bureau of Water Supply, the history of Baltimore's water supply system is one of continual growth.

One of the major items of expansion under Mr. Small's administration is the 17½-mile Montebello Tunnel, now under construction. The tunnel, ranging from seven to ten feet in diameter, will bring water from the Patapsco River to the Montebello filters. Ultimate capacity of the tunnel will be 120 million gallons a day. The $20 million project is scheduled for completion in 1951.

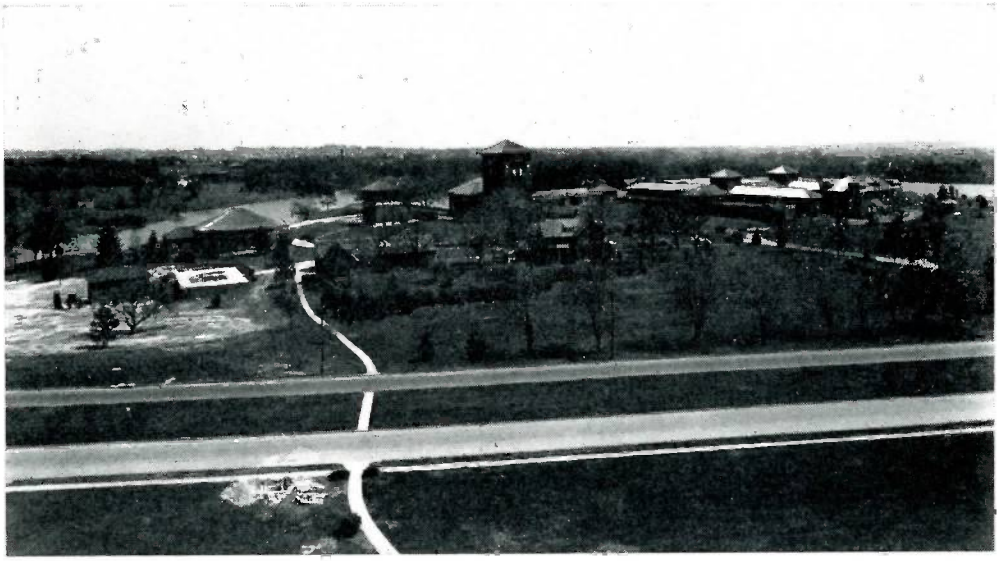
In 1931, when Mr. Small first became head of the bureau, the average daily consumption of water was 104 million gallons. It is now 178 million gallons and steadily increasing. Baltimore is currently in the midst of a record-breaking housing boom, which last year accounted for the installation of more than 8,000 new water service connections, many of them to supply two-family houses and apartment projects.



This dam on the Prettyboy branch of the Gunpowder Falls impounds 20 billion gallons of water. The four spillways total 274 feet in length and rise 130 feet above the stream bed. Prettyboy dam was completed in 1933. It is 25 miles upstream from Loch Raven dam.

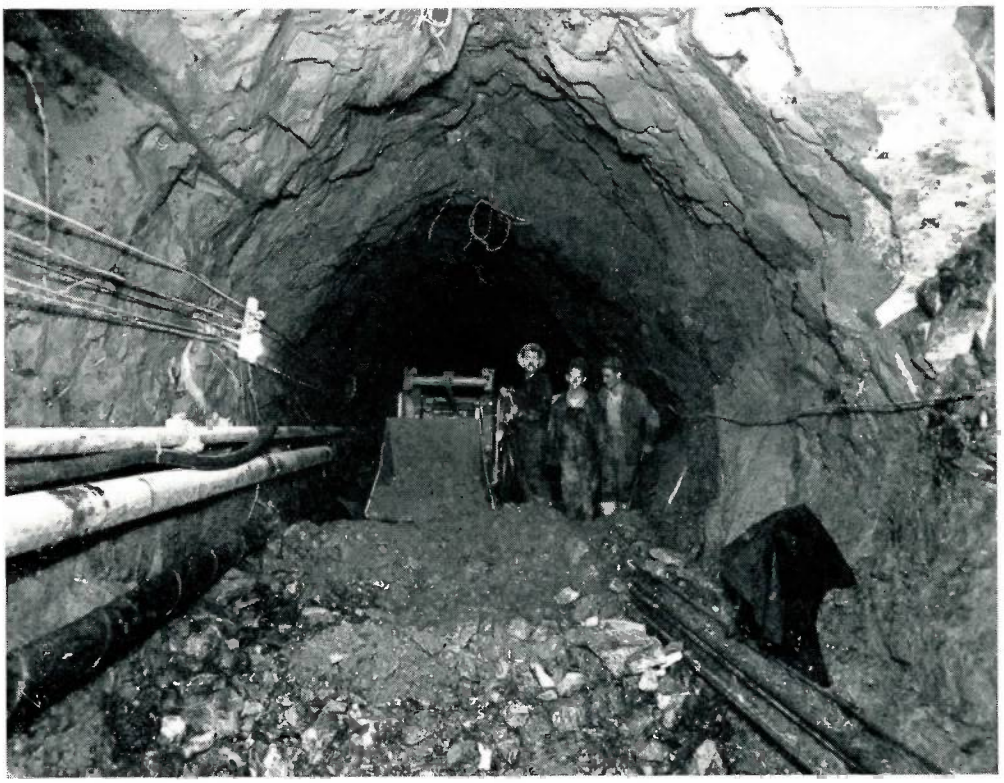


Loch Raven dam, completed in 1922, impounds 23 billion gallons of water. The crest of the spillway over which the water flows is 288 feet long, 82 feet above the stream bed.



This aerial view of the Montebello filtration station includes both plants, which have a combined rated capacity of 240 million gallons daily. Plant No. 1 on the east side of Hillen Road (right), completed in 1914, has 32 rapid sand filter units. Plant No. 2 has 28 rapid sand filter units and was completed in 1927. Filters are the heart of Baltimore's system.

Interior view of filter gallery in plant No. 1, showing the filter units and control tables.



An interior view of the $20 million Montebello Tunnel, which will carry water from the Patapsco River to the Montebello filters. Capacity of the tunnel will be 120 million gallons a day. The 17½-mile tunnel ranges from 7 to 10 feet in diameter; completion date: 1951.

The distribution system includes more than 235,000 service connections, serving more than a million and a half persons in an area of some 250 square miles. Receipts of the bureau last year were $6,580,000, compared to annual water sales of about $80,000 when the city first purchased the old Baltimore Water Company's system.

The building of the modern water system Baltimore knows today received its greatest impetus following the great 2-day fire of February 7, 1904, which wiped out the city's business district. Damage was estimated at from $125-$150 million, and more than 1,300 buildings were burned in an area of about 140 acres. Special trains were used to bring fire apparatus from Washington, Wilmington, Philadelphia, New York, and other cities. The strain on the city's water system was terrific. Excess water consumption for the first two days of the fire was 80 per cent greater than normal. The demand during the week of the fire was 170,000,000 gallons, about 40 per cent above normal.

A $5,000,000 water loan was approved in 1908, consulting engineers engaged, and a thorough study made to improve the city's supply. One of the first major results of this investigation was the construction of an experimental filtration plant, which was the forerunner of the present Montebello filters. The year 1923 was one of the most notable in the system's history, so far as construction was concerned, for work on the Loch Raven Dam was completed, as was the Pikesville reservoir, which has a capacity of 20 million gallons, and a start was made on the Montebello filters.

However, Baltimore's Bureau of Water Supply is not living in the past. The Patapsco development is proof of that, if proof is needed. And, some day in the future, Mr. Small hopes to see a huge dam on the Patapsco River, one having a storage capacity of around 43 billion gallons.

Off the . . Record . .

"My, isn't a night club a great place on a rainy night?"

"You said it! Stay outside and get wet, and come in and get soaked."

■ ■ ■

The bewildered department mechanic entered a ladies' dress shop.

"I want a corset for my wife," he said.

"What bust?" asked the clerk.

"Nothin'. It just wore out."

■ ■ ■

The country doctor came home all worn out and prepared for a good night's sleep, but no sooner had he retired than the phone beside his bed buzzed shrilly. He nudged his wife: "Listen, Ma, see who it is; say you expect me soon, or anything you think of."

The wife answered the phone, "Doctor is not at home," she said.

"Well, this is Mrs. Jones," rattled a voice in the receiver. "I got a pain and I want to see him as soon as he comes in."

The doc whispered some instructions to his wife, which she repeated to the would-be patient. "Do that, and I'm sure you'll soon feel all right."

"Thanks very much," said the lady on the phone, "but tell me, is that gentleman who seems to be with you qualified to advise me?"

■ ■ ■

Mrs. Fussy: "Are these chickens fresh?"

Butcher: "Fresh? Why, lady, if I had an iron lung I could revive 'em."

■ ■ ■

The pastor of a little church in Vermont was famous for the fact that every one of his sermons lasted exactly 22 minutes. Then one unfortunate Sunday the sermon lasted three-quarters of an hour.

At dinner his mortified wife asked him what had gone amiss.

"It was one of those things," said the pastor moodily. "My secret device was to slide a cough drop under my tongue just before beginning the sermon. It melted in exactly 22 minutes. Then I knew it was time to stop. This morning I was talking for over 40 minutes before I realized my cough drop was a suspender button."

■ ■ ■

Looking coldly at the man who had just given him a nickel for carrying his bags twelve blocks, the little boy said: "I know something about you."

"What?" asked the man.

"You're a bachelor."

"That's right. Know anything else about me?"

"So was your father."

"And don't think you can slip anything over on me, Smith. I used to be a little stinker, myself"

"It's a note from his teacher asking why he comes to school every day"

His secretary was just comfortably ensconced on his lap when the boss looked up and saw his wife entering the office. "Mile High Furniture Company," he dictated rapidly, "Gentlemen: Shortages or no shortages, how long do you think I can run my office with only one chair?"

■ ■ ■

"Well, I think I'll put the motion before the house," said the chorus girl as she danced out onto the stage.

■ ■ ■

Wifey: "When you were courting me you promised that if I accepted, you would never look at another woman."

Hubby: "Why, I thought you understood all about those campaign promises."

■ ■ ■

Mother: "How do you like the new maid, son?"

Son: "I don't like her at all. I'd like to grab her and bite her in the back of the neck, like daddy does."

■ ■ ■

"We were happy for several years, your honor, and then the baby came."

Judge: "Boy or girl?"

"Girl—she was a blonde and moved in next door."

■ ■ ■

Two elderly salesmen were sitting comfortably in their easy chairs at their club enjoying an after-dinner cigar. Said one to the other: "Every time I come here my wife thinks I'm out chasing women . . . Gad, I wish she were right!"

"What kind of a fellow is Paul?"

"The other evening the lights went out while he was calling on his girl and he spent the rest of the night tinkering with the fuses."

■ ■ ■

"They must have a girl's ball team in the harem."

"What makes you think so?"

"I just heard one of the girls ask the Sultan if she was in tomorrow's lineup."

■ ■ ■

"Cheer up, old man. Why don't you drown your sorrows?"

"Silly boy! She's stronger than I am."

■ ■ ■

Lady to photographer: "But these photographs don't do me justice!"

Photographer: "Lady, you don't want justice—you want mercy!"

■ ■ ■

A man about to be electrocuted phoned his lawyer from the death chamber. "They are about to put me in the electric chair," he said. "You are my lawyer—what do I do now?" The lawyer answered helpfully: "Don't sit down."

■ ■ ■

Mrs. Newrich was fond of flowers, especially salvia, but was not very reliable in getting names right.

"On this side of the walk," she said to her gardener, "I want you to put out some salivas. Now what would you suggest for the other side?"

Well, ma'am" said the gardener, "maybe we should put the spitoonias on the other side."

"I appreciate all this, gang - but I tell you my hiccups have stopped of their own accord!"

"Just a second, Ed - I want you to meet the bride!"

Mostly Personal

(Continued from page 1)

Porzelius and Leon (Cap) Small, who heads Baltimore's Bureau of Water Supply, have been recipients of the Fuller award for their efforts in the water works field.

Both Cattanooga and Baltimore are historic cities, and the story of the development of the water systems in each forms an interesting bit of history in itself. However, in both cases the cities are so engrossed in present and future plans that the past necessarily is relegated to a small space in the systems' archives.

It might be mentioned here that Baltimore approved the use of copper service pipe in 1924 and has used it continuously since that time. The first copper service pipe was purchased from Mueller Co. The first installations, all three-quarter-inch services, were made at 20 locations on Rossiter Avenue.

* * *

We are indebted to Paul Reed, pipe line editor of *The Oil and Gas Journal,* Tulsa, for much of the background material in our article, "Getting Out the Crude," page 7. Perhaps the most complete published record of the early beginnings of petroleum pipe lines is contained in that magazine's Diamond Jubilee number, which was published August 27, 1934.

* * *

The oil industry as a whole, it seemed to us, did an excellent job in bringing its accomplishments before the public on October 14, which was "Oil Progress Day." The industry, it has been pointed out, now consists of some 34,000 competitive firms, and more than 1,200 useful products are obtained from crude oil.

Its start was on an extremely modest scale. Samuel M. Kier is credited as the first refiner, since he discovered kerosene. Kier, so the story goes, had a heavy investment in his own product, Kier's Rock Oil, a patent medicine, but it tasted so vile that few people would buy it.

Using a primitive still, with a homemade "worm" on top of the kettle, Kier vigorously boiled some of his medicine. A colorless liquid dribbled out of the still, and Kier touched a match to it. It burned slowly, and he then tried it in a whale oil lamp. The lamp also burned, and the petroleum industry was born.

■ ■ ■

Getting Out the Crude

(Continued from page 8)

made an unsuccessful attempt to finance a 36-mile, 6-inch, gravity-flow crude oil line in the Parkersburg, West Virginia, area.

Heman Janes was perhaps the next to try his hand at building a pipe line. It, too, was to be a gravity-flow line, and he intended to used bored logs. His was a heart-breaking failure, for each night the skinners turned up to wreck or burn all the line that had been laid during the day.

Several other ventures met the same fate. The skinners were out to stop the pipe lines, and that was that. It was a bloody feud, and both sides had their share of casualties. The pipe line men were confident that their lines would some day become realities, and they had even gone so far as to attempt a line with pumps instead of gravity providing the power. However the line was wrecked and the pumps smashed.

Finally Samuel Van Syckel succeeded in laying the first "long distance" crude oil pipe line, which consisted of five miles of 2-inch line, completed on October 7, 1865, near Pithole, Pennsylvania. Van Syckel's line was laid in a little more than a month's time, despite the efforts of the skinners. The line had two pump stations operating at between 200 and 300 pounds per square inch discharge pressure, with a capacity of 800 barrels a day. The tariff was $1 a barrel, a price that was partially due to the fact that it had to be operated under armed guards.

However, the quest for oil was spreading out, not only through Pennsylvania but westward. As the search spread, so also did the demand. Gradually it became apparent that the skinners were fighting a losing battle. This early fight for existence marked the pipe lines' first successful skirmish with competition in their struggle to become one of the nation's most important means of petroleum products transportation.

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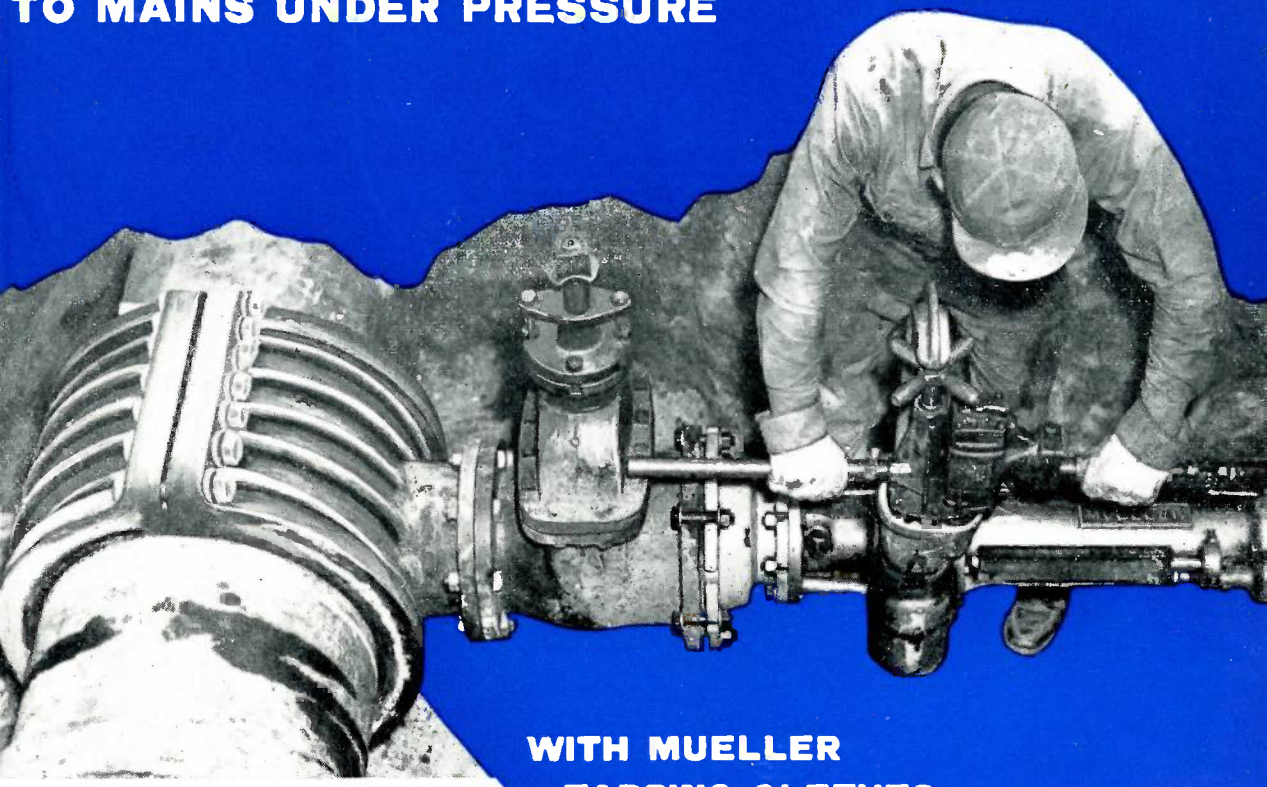

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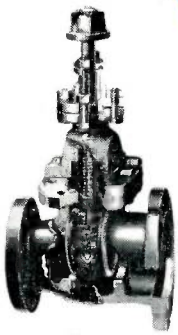

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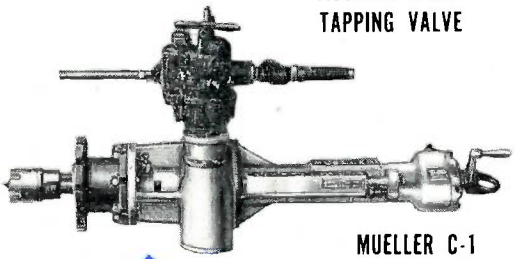

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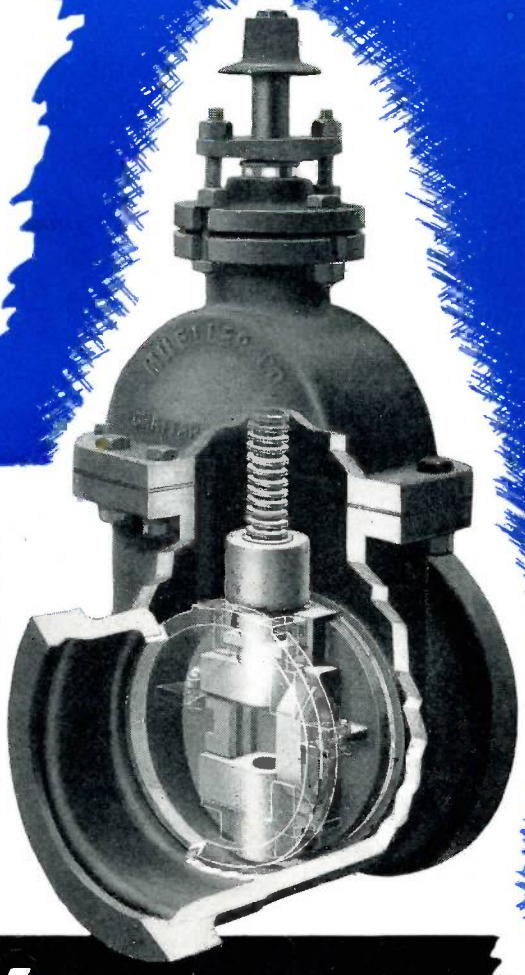

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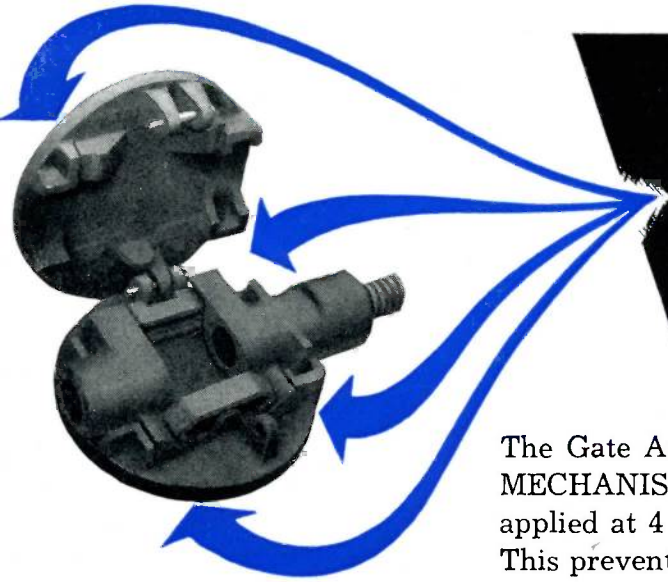

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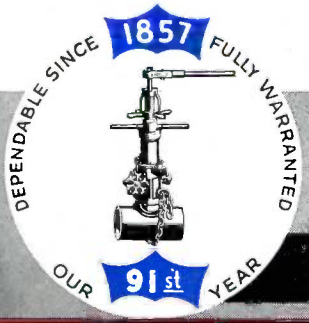

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