



A/C Pipe
Producers Association

Public Affairs Committee
TO International Affairs Committee

FROM *J. F. Welch*
J. F. Welch, Director, Public Affairs

Internal Correspondence

DATE June 29, 1981



SUBJECT Field Problem - Weston, Wisconsin

REF: (1) JFW correspondence, same title, April 27, 1981

ACTION REQUIRED: Review for information

Enclosed is a series of news articles published in The Daily Herald describing the "water problems" attendant to the use of A/C pipe in the City of Weston. The articles were given to AACPP Staff by Attorney Peter Hickey in Crivitz, Wisconsin. Although no date is available, the contents of the articles suggest that they were printed in late 1980. On the whole, the reporter was rather even-handed and factual in his/her handling of the subject.

What is more encouraging about these clippings are the comments of Gary Logsdon (Municipal Environmental Research Laboratory - Cincinnati) that there is no proof that asbestos fibers in drinking water cause cancer or health problems. Logsdon's views are also buttressed by those of a local physician, Dr. Edwin Horvath.

If you have any questions, please do not hesitate to call.

JFW/ajb

cc: A. Kahn, Esq.
N. Rahn, Esq.
N. Battle

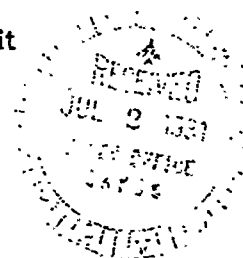
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Asbestos in Weston pipes; water termed safe

By PATRICK SKEI
Herald Staff

CINCINNATI, OHIO — Weston residents apparently have no need to worry about asbestos fibers, recently found in some of the town's water pipes, Weston officials were told last week by the Environmental Protection Agency.

EPA said the concentrations of asbestos were very small and there is no health hazard. Weston officials became concerned last month when they noticed corrosion in some of the town's asbestos-cement pipes, which are used in 23 miles of town's 30 miles of watermain. They feared that the corrosion would allow asbestos fibers to enter the water.

Water problem — Part I

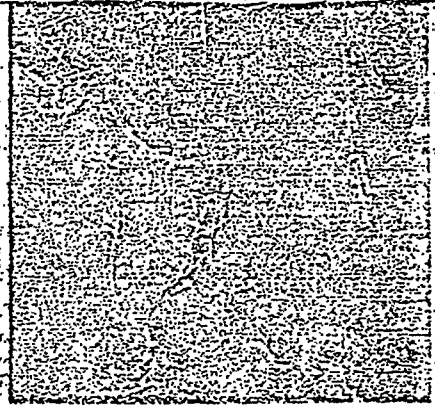
Inhalation of large amounts of minute asbestos fibers by workers in the asbestos industry has long been linked with higher rates of cancer, according to Gary S. Logsdon of the Water Supply Research Division of the EPA's Research Laboratory in Cincinnati, Ohio.

But there's no proof that asbestos fibers in drinking water cause cancer or health problems, he said. The town, unsure of effects of the corrosion, contacted Logsdon and other EPA officials in May. It also had Zimpro Inc., Rouschchild, analyze water taken from the pipes. Zimpro's analysis showed that some asbestos fibers were seeping into the drinking water. The amount was not enough to cause any alarm, Logsdon said.

No health hazard exists, the EPA concluded. Weston's water is safe to drink. Dr. Edwin Horvath of the Marshfield Clinic, who has done much research on the effects of asbestos, reached the same conclusion. "He told us that he wouldn't hesitate to drink the water," said Richard Schneider, the town's director of public works.

Both Horvath and the EPA added that even if there were a link between asbestos in drinking water and illness, the amount in Weston's water is too small to cause a problem.

Weston's discovery, however, offered the EPA a unique opportunity. It had a community which was willing to talk about the situation and allow it to conduct studies on the corrosion.



Asbestos in pipe

The strands in the picture at left are asbestos fibers as they appear on the surface of an asbestos-cement pipe when viewed under intense magnification. Corrosion attacks most materials used in pipes, but asbestos is immune to such attacks. That results in erosion of the concrete and other substances, leaving the brittle asbestos exposed. Eventually, the asbestos can break and enter water flowing through the pipes. At right is an equally magnified section of the pipe. It shows a smooth interior surface.

There are no proven hazards connected to the release of fibers in the water, but if we could find an economical way to stop their release, we have assured a solution to a possible future problem, Logsdon said.

As Logsdon explained it, more than 200,000 miles of the country's watermain are made with asbestos-cement. Weston's pipes are only 10 years old, but other communities have asbestos-cement pipes that are 40 years old.

EPA may test sealer in Weston

(From Page 1)

blended rather than replaced. Rehabilitation would cost about 20 percent of the cost of replacement. Preliminary work, done by the EPA in the Pacific Northwest indicates that coating the pipes with a zinc compound seals loose asbestos fibers. Chemicals not added to the water supply would prevent further corrosion.

EPA is proposing to test the compound on a segment of Weston pipe that will be taken out of service. A study such as we are talking about could take five years to do, no we want to start now," Logsdon added.

While there's no hazard, it has been demonstrated that the fibers are there. "Weston offers us the opportunity to learn. Information gathered there could someday help the nation."

(Next: Weston's role)

asbestos pipe that has been scraped and treated with a zinc compound. Preliminary studies done at the U.S. Environmental Protection Agency Research Laboratory in Cincinnati, Ohio, indicate that the zinc coating seals the pipes, making the asbestos fibers stable. Only a few strands of fibers are visible in the second picture. Both pictures are magnified at about 10,000 times.

Electron microscope photos furnished by the EPA Research Laboratory. Some of those communities also have water that's more corrosive than Weston's, which could mean more deterioration of pipes and higher concentration of asbestos fibers in the drinking water.

If a method can be found to treat asbestos-cement pipe so the fibers will not be released, the pipes could be rehabilitated. See EPA, Page 8, Column 2.

Weston seeks research grant to check asbestos pipe

VAT HUPINSKI

When the Weston Water Utility dug into one of its mains to install a service line for a new supermarket last month, it didn't realize it was tapping into a venture with national implications.

What utility crews found was a pipe with a soft interior. The particles could be loosened by rubbing.

A crew member showed the pipe to Weston's chief works director, Richard Schneider. While the workman saw only a problem of serious corrosion, Schneider spotted deeper trouble.

The pipe, Schneider knew, was made of a mixture of asbestos and cement. Asbestos is one of the world's strongest minerals. It seldom deteriorates.

If there was corrosion, Schneider reasoned, the concrete would deteriorate, exposing brittle asbestos fibers to the flowing water. In time, water pressure would break the fibers.

The discovery triggered some anxious moments in town officials.

"Dick (Schneider) called me immediately and said this could be serious," said Vilas Machmuel, Weston's chairman. "I said I agreed and suggested we take samples of the water."

The Water Utility sent the samples to Zimpro Inc., Rothschild, which confirmed there were asbestos fibers in the water. (The U.S. Environmental Protection Agency (EPA) has since deter-

mined that the amount is not enough to warrant a health hazard.)

Asbestos has also been linked to lung cancer and gastrointestinal illness among asbestos-industry workers who inhale large quantities of it. (Thus far, there's no link between asbestos ingested in water and illnesses, although research in this area is continuing.)

The EPA wanted more information, so Schneider made the first of three trips to the agency's research laboratory in Cincinnati, Ohio.

Water problems Part II

The first trip was to analyze the situation in Weston. The second trip was scheduled so that he could attend a seminar on corrosion at which officials from across the country exchanged information.

The third, which occurred last Friday, was to arrange a cooperative agreement between the Weston Water Utility and the EPA. That agreement, if funded by the federal government in fiscal year 1991, will result in a Weston research project aimed at halting deterioration of pipes. If successful, other communities with asbestos-cement pipes could use the process.

"We feel a research project of this type would be extremely beneficial nationally and important locally since the Weston Water Utility has 30 miles of distribution mains of which 23 miles are asbestos cement mains," Schneider said.

The project, with a proposed budget of \$66,000, would take one block of watermain along Fox Street out of service. A replacement pipe would be installed to serve customers and the original pipe would be used for tests.

The original pipe would be connected to a circulating pump, which would simulate average water flows.

The pipe would be flushed, cleaned and scrapped. After each step water samples would be analyzed for asbestos fibers. When all the loose fibers are gone, a special coating would be placed on the pipes.

The EPA has had some success using a zinc sealer in the Pacific Northwest. That process might be tried in Weston, according to Mike Schock of the Drinking Water Research Division at the EPA's laboratory in Cincinnati.

The project would also provide money to determine the extent of asbestos fibers in water throughout the Weston system.

Since 1979, Weston has prevented further corrosion of its watermain by adding sodium hydroxide to water at the wellhead. The sodium hydroxide reduces the water's corrosive acidity. Plans

call for the town to continue using the chemical after the pipes are sealed.

"Fox Street was chosen because that's where we initially discovered the deterioration," Schneider said. "We know the condition there. We can't prove other areas are as badly deteriorated, but we have reason to believe there's some deterioration throughout the system."

The proposed project would have three partners — Weston, the EPA and Raymond International Inc., a private firm from Oakland, N.J., that has developed a pipe-coating process that it wants to test.

The EPA is proposing to pay 95 percent of the costs. Weston would pay about 5 percent, which Schneider figures would be the cost of the replacement main on Fox Street. The EPA would also provide backup research at its Cincinnati laboratories.

Raymond International would donate the services of two of its men for two to three months. The men would receive some pay through the grant.

Services donated by the EPA and Raymond International would bring the project's actual value to about \$200,000.

Gary Logsdon of the EPA's Water Supply Research Division said he is hopeful the project will be given funding priority because of its far-reaching effects.

Next: The history of asbestos cement pipe

Asbestos pipe used because of cost

TRUPINSKI

Staff
peans began making asbestos-cement pipes 50 years ago. Communities in the States started using them 40 years ago. The town of Weston, 10 years ago, the first time Weston used asbestos-cement there were no known asbestos health hazards, said Vilas Machmueller, town chairman. Machmueller, who was a town supervisor the first pipes were laid in 1968-69, recalled that the board then was split between asbestos-cement and cast iron pipes. The first was cheaper, but the second was stronger. He opposed it (asbestos-cement pipe) from a financial standpoint," he said. "I had some experience with it at the (Rothschild paper) and knew it was mechanically weaker because it broke. However, the asbestos-cement pipe was 20 percent cheaper." Town Board initially opted for the cast pipe, Machmueller said. But shortly after the decision, one of the board members changed his mind so the town went with asbestos-cement. In 1969-70, Weston laid more water mains and the dispute flared. About \$6,000 separated the two sides, Machmueller said. After much debate, the cheaper asbestos-cement won again. Generally, asbestos-cement pipe has been

used in that part of the town north of Highway 29. Cast iron pipe, which was installed in later years, was used south of the highway.

The D.C. Everest Second Addition, which is the area south of the high school, also has some asbestos-cement pipe, according to Machmueller.

Water problems Part III

Lines from the wells to the towers are cast iron, he said. The biggest main of asbestos-cement is the eight-inch pipe on Fox Street. (The U.S. Environmental Protection Agency is proposing taking that segment of pipe out of service so tests studies can be made of it.)

When the pipes were put in place, there were no immediate problems. But as time went on, corrosion occurred.

"Weston has soft water," said Archie Becher, president of Becher-Hoppe Engineers Inc. and a consultant to the town. "Soft water is without large amounts of minerals. Such water acquires minerals from things it comes in contact with."

Among the minerals lacking in Weston's water is calcium. Cement, however, contains calcium.

The water absorbed calcium from the cement, which in time weakened the cement. The asbestos fibers became exposed. Water balance can now break off the microscopic fibers, allowing them to enter the drinking water.

Weston's pipes are young, but other communities across the country have much older pipes. That is a concern for the EPA, which believes that corrosion in the older pipes is more pronounced.

Gary Logsdon of the EPA's Cincinnati research laboratory said the Pacific Northwest, the San Francisco area, New England and the Southeast, from the Carolinas to Florida, are areas prone to serious water pipe corrosion. Many communities in those regions also use asbestos-cement pipes.

Communities in central Wisconsin that used asbestos-cement pipe include, Bowler (entire system), Shawano (a large portion of system), Phelps (a large portion) and Crivitz (Marinette County). The condition of their pipes is unknown.

"In Crivitz, the project got a third to done and the whole thing stopped," said Richard Schneider of the Stevens Point office of Federal Emergency Administration (FEMA), which financed the project. "A customer in the system got an injunction against it because he was afraid of a possible health hazard." See ASBESTOS, Page 12, Column 8.

Asbestos pipe used because of cost

(Page 1)

FEMA finances water projects in small rural communities. It requires those communities to accept the lowest Materials must be approved by the state, but asbestos-cement pipe has been on the approved list. Schneider said. Because asbestos-cement pipe is one of the least expensive pipes, company's using it are often the lowest cost.

Schneider said most of the FEMA projects in northern Wisconsin now use polyvinylchloride pipes. Only about 10 percent still use asbestos-cement and another 10 percent use ductile iron or cast iron.

Polyvinylchloride is a plastic and thus has an oil base. If prices rise, the cost of plastic pipe will rise, possibly making it less competitive. That could make asbestos-cement again the least expensive pipe.

Asbestos-cement pipes are still being used nationally, Schneider said.

No hazard has been found with (their) release of (asbestos) fibers in water, but if we can find an economical way to stop the release, we have assured a solution to the problem down the road," he said.

Text: Health and asbestos

Effects of asbestos in drinking water not known

By PAT RUPENSKI

Research is continuing into just how asbestos affects health.

The medical community has long known that asbestos inhaled by workers exposed to large amounts of it causes a greater chance of cancer in the lungs, intestine, stomach and colon.

What is not known are the effects of asbestos if it has been ingested through water, food or other beverages.

Dr. Edwin Horvath of the Marshfield Clinic says there has been little scientific study on the effects of asbestos in drinking water. "The field here is still filled with ignorance," he said.

Horvath has done extensive research on the effects of inhaled asbestos. He also helped design the U.S. Navy's surveillance system for workers in the shipbuilding industry, which uses much asbestos.

Attention wasn't focused on the effects of asbestos in drinking water until about 1973 when asbestos-like fibers were found in Lake Superior, he

said.

Those fibers were traced to the dumping of tailing wastes by Reserve Mining Co. As a result of the dumping, drinking water in the Minnesota communities of Duluth, Two Harbors and Beaver Bay was found to contain from 50 million to 100 million fibers per liter.

Water problems

Part IV

After some storms, which increased water turbulence, the counts were as high as 1 billion fibers per liter, according to Gary Logsdon of the U.S. Environmental Protection Agency (EPA) Research Laboratory in Cincinnati, Ohio.

In comparison, two analyses of the Western Water Utility's drinking water showed counts of 700,000 fibers per liter and 4½ million fibers per

liter. The higher count is believed due to turbulent flushing of a hydrant from where the sample was taken, said Richard Schneider, Western's director of public works.

Asbestos-industry employees inhale 50,000 to 70,000 fibers with every breath they take while at work, Horvath said.

"The number of fibers in the asbestos worker would be many, many times greater than that ingested through drinking water," he said.

"We cannot say there is no risk (from drinking water), but the incidence (of cancer). If there is any, is many times less than that for workers exposed to the problem."

Horvath's advice: "The proven policy is to minimize exposure to asbestos as much as you can. If

Utility to answer questions

The Western Water Utility will meet Monday at 7 p.m. at the Western Municipal Center to answer questions on asbestos fibers found in some of the town's water mains.

this (Western's water) was my drinking water, I wouldn't hesitate to drink it for the foreseeable future. But attempts should be made to remove as much fiber as possible."

Horvath said that other potables, including some wines and liquors, contain higher concentrations of fibers.

Research shows that "asbestos may act more to promote other chemicals (in the body) to cause cancer," said James Millette, a scientist at the EPA research laboratory.

Lungs are attacked through inhalation. How the asbestos gets into the gastrointestinal tract is less certain. Three theories generally exist, Millette said.

The most widely accepted is that mucus containing the fibers is swallowed, entering the gastrointestinal tract. If that theory is eventually proven as fact, it would follow that asbestos fibers ingested through drinking water might also enter the tract.

See EFFECTS, Page 8, Column 8.

food, which carries them to the gastrointestinal region, and that the eating areas for asbestos workers are contaminated with large amounts of asbestos, causing direct ingestion of the fibers.

Millette said people exposed to large amounts of asbestos in drinking water are having their cancer rates studied.

Preliminary findings in one such study in a California community, which had high asbestos counts in its environment, showed higher rates of stomach cancer among males and higher rates of pancreas cancer in females.

"The study is not complete so we do not thoroughly know if the higher rates are from asbestos or some other factor," Millette said.

One problem with such studies is that they take years to complete. The EPA is now looking at cancer rates in the Duluth area. Conclusive results might not be known for 20 to 30 years.

Other studies include feeding asbestos fibers to rats and hamsters. Preliminary findings show no cancer increase in female hamsters, Millette said. The tests on the male hamsters and rats are incomplete.

In a paper issued last year, Millette and another EPA scientist, Leland J. McCabe, summarized much of the known asbestos-related research. Their work showed asbestos can enter water supplies through several sources.

In the Lake Superior area, asbestos-like fibers entered the water of Duluth, Two Harbors and Beaver Bay, as a result of iron ore waste discharges made into the lake.

In a Kentucky community, an asbestos waste pile was suspected as the source of asbestos entering the water.

"Natural erosion of asbestos-bearing rock formations is considered to be the source of fibers in some

lion to 100 million fibers per liter have been reported for a number of supplies around San Francisco and over 100 million fibers per liter have been found in the supply of Everett, Wash."

Corrosive water flowing through asbestos-cement pipe in communities in South Carolina, Florida, Kentucky and Pennsylvania have all shown asbestos concentrations of more than 10 million fibers per liter, Millette said.

"And in tap water drawn from cisterns using an asbestos-tile roof for rain collection, concentrations of asbestos of more than 500 million fibers per liter have been found."

Next: Others being affected by asbestos

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FRED HARDY

Athens, Tomahawk using asbestos water pipe

By PATRICKINSKI
Herald Staff

The town of Weston might not be alone when it comes to having asbestos fibers in its drinking water.

The state Department of Natural Resources has identified 16 other Wisconsin communities that are likely candidates. Among them are the village of Athens in Marathon County and the city of Tomahawk in Lincoln County.

All 16 communities have at least some asbestos-cement pipe and all have "aggressive" water, which leads to pipe corrosion and possible loosening of asbestos fibers, according to Robert Baunmeister, chief of the DNR's Public Water Section. The other communities are the village of Elroy in Wood County; Land O Lakes and Phelps in Vilas County; the cities of Mauston and New Lisbon in Juneau County; the city of Rhineland in Oneida County; Laona in Forest County; the city

of Ladysmith in Rusk County; city of Cheek in Barron County; the village of Collax in Dunn County; the village of Elletts and the city of Independence in Trempealeau County; and the village of Warrens in Monroe County.

Water problems Last of series

All the communities are in the northern or central part of the state. Generally, they have shallow aquifers and low alkaline levels in their water, Baunmeister said. Those conditions cause soft water, which is corrosive to water pipes because it absorbs the pipes' minerals.

Line amount of asbestos-cement pipe in each community varies, Baunmeister said. It can be

anywhere from 2,000 feet to 50 percent of the system. Other communities in Wisconsin are also known to use asbestos-cement pipe in their water systems but their water is not as corrosive.

Baunmeister said chemical tests will be made of the water in the 16 communities to determine if there is pipe deterioration. "If there is, then we will do asbestos counts of the water," he said.

The 16 communities stand to benefit from more extensive research that the Environmental Protection Agency (EPA) is proposing to do at Weston. If asbestos-cement pipes can be rehabilitated there, the process could be repeated elsewhere.

On the national level, the federal government is involved in considerable research and other programs regarding asbestos.

A synopsis of federal activities related to the problem shows:

—The Department of Health and Human Services and the Navy is conducting shipyard workers

who were exposed to asbestos during World War II. The department is also considering new limits on asbestos levels in the work place.

—The Food and Drug Administration is researching the amount of asbestos in injectable drugs. It is also developing methods to analyze the amount of asbestos in food.

—The EPA and state governments are checking for asbestos in schools and other public buildings. EPA is considering classifying asbestos as a hazardous air pollutant and is considering regulating it under the Toxic Substances Control Act.

—The Consumer Products Safety Commission is looking into asbestos in hair dryers as a result of urging by consumer groups.

Research is also being done in Canada, which has the world's largest asbestos deposits.

The situation in Weston appears destined to become an important part of the data that is being acquired on asbestos.