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TO: PRO Members

FROM: Dan Stanowick *DS*

SUBJECT: Publicity

DATE: September 10, 1992

COPIES: Pat Benkner
Bob Burnett
Nora Jacobs
Dave Meeker

I thought you would be interested in seeing two significant new publicity scores. One is from the July issue of Water Engineering & Management. The other is from the September issue of Public Works. Both feature our Fargo, North Dakota PVC pipe case history.

As always, let me know if you have any questions. I look forward to seeing you later this month in Cleveland.

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PRODUCTS

AT WORK

Pipe Fights Great Plains City's Corrosive Soil

In the Great Plains region of the U.S. and in cities there like Fargo, North Dakota, the economy is largely fueled by agriculture, mining, and livestock industries. The land and its soil is a way of life for everyone.

The soil also can cause problems, however, particularly when water pipe is involved. The same soil that produces valuable minerals and crops also can be particularly corrosive to the piping used for water mains and distribution lines. This has caused major leaks and big problems for city officials.

According to Fargo City Engineer Robert Whelton, that was the case with his city's water piping system until it began to have PVC pipe installed. "Back in 1970, we had some serious difficulties with old cast-iron pipe. Because the soil is so corrosive, the pipe had become pitted, corroded and porous, causing major leaking difficulties. There was much replacement work to be done, and we had to consider other alternatives for new distribution systems as well."

Fargo's switch to PVC pipe was not immediate. At the time the problems with the old pipe appeared, PVC was still a new, unproven product. The city tried it along with other pipe materials.

In 1980, convinced of PVC's consistent performance in comparison to other pipe materials, Fargo officially made the switch, and the city has used nothing but AWWA C-900 PVC and C-905 pipe—in sizes from 4-16 in.—in new and replacement water distribution systems since. To date, the city has installed more than 45 miles of PVC pipe in these systems.

The material does not cost as much, is generally easier to install and tap, and produces less friction

loss and better flow than alternative pipe materials, according to Whelton. He continued, "We wanted a product that we could put in the ground and forget about. PVC pipe

requires little, if any, maintenance, and we haven't had one break in 10 years."

For more information on this subject, write in 867 on the reader service card.



Lightweight PVC pipe maintains its integrity in corrosive soils in cities like Fargo, North Dakota. Gravel bedding helps ensure the pipe's stability.

Prepared by Clayton H. Billings
Editorial Consultant

Flavor Profile Analysis Data

Flavor profile analysis (FPA) has been adapted for use in taste and odor monitoring of water supplies in several large water systems in the U.S., including those of the City of Philadelphia. While it has been evaluated as a standard method, it has not yet seen adoption. To optimize the FPA method, quality assessment and quality control protocols were studied. FPA data for influent and effluent water samples from two Philadelphia treatment plants were evaluated. The quality of FPA data for influent description and quantitative response for each organo-

leptic descriptor (like chlorinous, musty, earthy) was determined. A quality assessment method was established from the qualitative descriptors and quantitative measurements of the FPA data for examining the performance of the sensory panel. To evaluate responses of the panel, quality assessment tasks were defined for individual panelists and for the whole panel for general statistics, qualitative descriptions, and quantitative responses. Parameters for general statistics were numbers of samples, numbers of tests, numbers of replicates, and numbers of panelists. The parameters for evaluating qualitative descriptions were classified as selectivity and consistency. Selectivity indicates not only how often each descriptor was used, but which panelist used it. Consistency would show reproducibility of the test results. When the consistency within the panel is being examined, a term

"other note-to-descriptor ratio" (ON/D) is defined. A descriptor is any single identifiable characteristic perceived when a sample is tested. A "note" is a qualitative descriptor reported by at least half the panel. An "other note" is a descriptor reported by less than half the panel. The higher the ON/D of a panelist, the more the panelist's perception was not confirmed by the rest of the panel. It could mean the panelist was unusually sensitive or it could mean he or she was unfamiliar with the descriptor meanings. Two types of errors are used in qualitative analysis. A Type A error occurs when a descriptor is reported the first time a sample is run but not in a replicate. A Type B error occurs when a descriptor is reported in a second sample but not in the first. The latter is significant when substantial time separates the testing. If the two samples are tested in the same session, the errors

Pipe Keeps Water Flowing

THE land plays a vital role in the lives of the people who live in the Great Plains region of the United States. In

cities like Fargo, North Dakota, the economy is largely fueled by agriculture, mining, and livestock industries. There, the soil is a way of life for everyone.

However, the soil can also cause problems, particularly when water pipe is involved. The same soil that produces valuable minerals and crops also can corrode the piping used for water mains and distribution lines, causing major leaks and big problems for city officials.

According to Fargo City Engineer Robert Welton, that was the case with his city's water piping system until it began to use PVC. Back in 1970, Fargo had some serious difficulties with its water pipe.

"Because our soil is corrosive, the pipe had become pitted, corroded, and porous, causing major leaking difficulties. There was a lot of replacement work to be done, and we had to consider other alternatives for our new distribution systems as well."

■ LIGHTWEIGHT PVC has proven to be reliable for use in the corrosive soils found in Fargo, North Dakota.

The switch to PVC pipe was not an immediate one though. "At the time we were having problems with our pipe, PVC was still a new, unproven product. We did use it, but we also tried other pipe materials too," he said.

In 1980, convinced of PVC's consistent, reliable performance, Fargo officially made the switch. The city has used nothing but AWWA C-900 PVC and C-905 pipe—in sizes from 4 to 16 in.—in its new and replacement water distribution systems since. To date, Fargo has installed more than 45 miles of PVC pipe. Welton explained that it is cost-effective, easy to install and tap, and generates less friction and better water flow than alternative pipe materials.

"We wanted a product that we could just put in the ground and forget about. PVC pipe requires little, if any, maintenance. We haven't had one break in any of the PVC pipe that we've installed in ten years," he explained.

The job in Fargo is not over yet. In the last three years alone, 400 to 600 breaks have been reported in pipe that had been installed before the switch to PVC and that has not yet been replaced. However, Welton is confident that PVC pipe will keep the city's water flowing smoothly without problems.

