

COPPER PIPE PINHOLE LEAK INVESTIGATION SUMMER / FALL 2003 PROGRESS REPORT

Dear Valued Customer:

Working as an advocate for our customers, the Washington Suburban Sanitary Commission (WSSC) has been aggressively investigating the perplexing issue of copper pipe pinhole leaks, which has now proven to be a larger problem impacting citizens and water utilities across Maryland and the nation. We have learned that because of the number, extent and complexity of potential factors involved, it may be impossible to determine the exact cause(s) of pinhole leaks reported by our customers. Even though WSSC is not responsible for home plumbing pipes, we are optimistic that we have identified a course of action that could possibly help reduce future pinhole leaks for our customers.

Based on in-depth research, independent copper corrosion experts have recommended we add orthophosphate to our water. Orthophosphate effectively reduced pinhole leak activity in laboratory tests and during a pilot project. Beginning this fall, we will add a very small amount of orthophosphate during the water filtration process, approximately one part per million, to potentially form a protective layer on the interior surface of copper pipes. More than half the water utilities nationwide safely use phosphates including Rockville, Fairfax, and Carroll, Calvert and Frederick Counties. Phosphates occur naturally in meat and dairy products and are used in many of our favorite foods and drinks. *Please see enclosed orthophosphate fact sheet.*

BACKGROUND

Since the summer of 2000, WSSC has been working as an advocate for our customers to try to determine the cause of troubling copper pipe pinhole leaks. To date, 4,900 plus customers (which represents approximately 1 percent of our customer account base), have reported these leaks to us and have completed questionnaires. Observations on data from questionnaires include: majority of pinhole leaks being reported are in cold water, horizontal copper piping; majority of pinhole leaks being reported are in the older areas of Montgomery and Prince George's Counties; and nearly 80 percent of the reports received thus far involve homes built prior to 1970.

Research indicated that numerous factors warranted investigation: pipe manufacturing/age, type of copper piping (thickness), pipe installation, bacteria, water temperature, electrical currents, interior surface condition of pipes, velocity of water, changes in water direction (elbows, tees), the water supply system, and corrosiveness of the water, just to name a few. Working closely with officials from the copper manufacturing industry, master plumbers, local officials and nationally recognized water quality and copper corrosion experts, including Dr. Marc Edwards of Virginia Tech, we have been able to discount many factors as the primary causes of pinhole leaks in our service area. Unfortunately, despite our best efforts -- and because of the complexity and number of factors involved -- we will probably never know the exact cause of pinhole leaks impacting WSSC customers.

LATEST RESEARCH

Recent research conducted by Dr. Edwards indicates that U.S. Environmental Protection Agency (EPA) requirements related to corrosion control and the removal of natural organic matter, coupled with best industry practices, may promote copper pipe pinhole leaks. Corrosion experts believe that some of the chemicals making up the natural organic matter act as corrosion inhibitors and protect metal piping. To meet stricter federal water quality standards, utilities across the Country have been removing more natural organic matter. Natural organic matter includes many different organic chemicals in rivers and reservoirs from sources such as decaying leaves.

Reinforcing these findings is the fact that similar kinds of copper pipe pinhole leaks are occurring elsewhere in Maryland and across the nation. In fact, Dr. Edwards has indicated that he receives calls every day from utilities/engineers/customers across the Country with similar copper pipe pinhole leaks, and he strongly suspects the problem is getting worse nationally. Additionally, the Maryland General Assembly passed a bill earlier this year creating a new, multi-agency task force to study pinhole leaks on a statewide basis. We support and will participate in this initiative.

In light of this research, and since similar kinds of copper pinhole leaks are occurring elsewhere in Maryland and across the Country, U.S. EPA and other national research institutions are being urged to get involved in this widespread issue.

To help answer any questions you may have about our pinhole leak investigation and orthophosphate, we have scheduled two informational meetings: Tuesday, September 16 at 7 p.m. in room LK 121 of the WSSC building, 14501 Sweitzer Lane in Laurel; and Thursday, September 18 at 7 p.m. in the 3rd Floor Conference Room of the Stella Werner Building, 100 Maryland Avenue in Rockville. If you have any questions regarding our investigation, please call our Public Communications Office at (301) 206-8100 or visit our website at www.wsscwater.com and click on *Pinhole Leaks*. Thank you for your continued support and patience as we work to minimize future pinhole leaks for our customers.

Sincerely,

John R. Griffin
General Manager

Summer / Fall 2003 Progress Report
Page Three

bcc: Commissioners
General Manager's Office
Pinhole Leak Task Force Members