Dealing with Entrained Air in Water Lines

Entrained air frequently enters rural water systems when our crews are searching for leaks (usually from midnight to 5am), particularly because the leak detection process itself often involves altering system pressures or actively introducing air to find pipe breaches. When water is shut off for repairs or during pressure testing, it creates a vacuum that allows air to enter through existing leaks, loose fittings, or faulty valves. This will cause spitting and sputtering of the water until the air is eventually eliminated from the distribution lines.

To Eliminate: Slowly open as many faucets as possible to allow the air to escape from the distribution lines.

How Leak Detection Causes Air Entrainment

- **Active Air Injection (Acoustic Detection):** To locate "seeper" or underground leaks, operators may pump air into water lines to create a higher PSI than the surrounding water. This air escapes through the leak, and the resulting sound of bubbles is used to pinpoint the leak, but it also leaves large amounts of air trapped in the pipes.
- **Pressure Changes/Repairs:** When rural water lines are drained or repaired, the resulting air pockets fill the space once occupied by water. When the pump turns back on, this trapped air enters the distribution system, causing "sputtering" at customer taps.
- **Suction Side Leaks:** If a leak is on the suction side (inlet) of a pump, the pump can draw in air directly from the surrounding environment while operating.

Customer Complaints: Entrained air leads to milky or white water at the tap, which is actually thousands of tiny air bubbles releasing from the pressurized system.

LCWW will strive to send out Alert notices each evening before leak testing begins.