

Boiler Water Treatment:

The main concerns with boilers today are: Corrosion from pitting, corrosion of condensate lines, and scale formation on heat transfer surfaces from calcium and magnesium salt precipitation. **Lone Wolf Technologies** treatment programs take the necessary proactive steps to prevent these issues from becoming problems.

Corrosion:

Corrosion is the breakdown of the boiler metal and is caused by dissolved oxygen. Corrosion can cause the system stress, reduce boiler lifespan and cause cracking. The higher the pressure of the system, the more corrosion there will be. **Lone Wolf Technologies** uses three methods to address corrosion.

- Deaerators: Remove dissolved gases from water
- Oxygen Scavengers: Reduce or eliminate oxygen in boiler water
- Condensate Line Treatment with an Amine: Diminish to protect the condensate line from corrosion.



Scale Build-Up:

Scale is caused by calcium and magnesium salts forming deposits on the inside of piping and heat transfer surfaces. In addition to scale, there can be other feedwater contaminants such as Silica, Iron, and Aluminum that can also affect a boiler's performance.

Lone Wolf Technologies uses water purification methods that are designed to reduce scale-forming salts and reduce treatment costs.

Lone Wolf Technologies uses an internal boiler treatment, oxygen scavenger, amine line treatment and recommended blowdown frequency for all our boiler water treatment programs. We also advise our clients on the best pretreatment options for their boiler, in order to avoid scale buildup. **Lone Wolf Technologies** boiler programs are further enhanced with a minimum monthly water testing service. All of which will help lower your cost of operation, improve your boiler operating efficiency, reduce maintenance levels, prolong your equipment life, and maximize your process productivity.



Cooling Tower Treatment Programs:

Recirculating water systems are used to cool industrial, commercial, and HVAC needs. They can be closed loops, non-evaporative semi-closed loops and open evaporative cooling systems. To protect these cooling systems from corrosion, scale and microbiological growths each system should have a comprehensive water treatment program. A Lone Wolf Technologies water treatment program is individualized for each customer and each application.

Basic Program Outline:

- Minimum Monthly Water Testing
- Cooling Tower Scale and Corrosion Inhibitor
- Dual Biocide
- Yearly Legionella Testing
- Yearly Preventative Shock Treatment
- Legionella Water Management Plan (required for facilities accepting Medicare/Medicaid funds)
- Help with Evaporation Credits
- Monthly Reporting

Recommended Additions:

- Yearly Tower Cleaning
- Legionella Advanced Warning System
- Water Reuse

Benefits:

- Improve System Efficiency
- Reduction in Scale Formation
- Minimization of corrosion
- Decrease Biological Growth
- Reduction in Water Usage
- Reduction in Overall Cost of Operation
- Protection from Legionella Bacteria

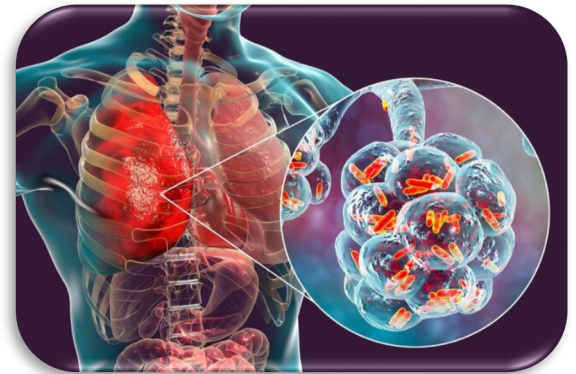


Lone Wolf Technologies works diligently to provide our customers with proven and effective water treatment solutions. All our water treatment programs are customized to your system and we strive to work around any limitations.

A presentation at the CDC's 66th Annual Epidemic Intelligence Service Conference, reported that more than 80 percent of cooling towers tested positive for Legionella. To make matters worse, cases of Legionnaires' disease reached a record high in 2018. According to the CDC's Vital Signs report, Legionella bacteria thrive in building water systems like cooling towers when they are not adequately managed. Legionella treatment and prevention is included as part of all **Lone Wolf Technologies** cooling tower treatment programs. Because we take Legionella contamination seriously, Lone Wolf Technologies will have your cooling tower tested for Legionella by a CDC ELITE certified laboratory at no cost to you.

Legionella (Legionnaires Disease):

Legionella bacteria can cause a more virulent form of pneumonia called Legionnaires' disease. The bacteria is not spread via person-to-person contact or by drinking water, but can be contracted by inhaling mist from contaminated water sources, such as cooling towers and plumbing systems. As it grows and spreads, it can become a health concern to humans. For the safety of all our clients, we utilize a variety of measures to ensure minimal biological growth in your facilities cooling towers.



Preventative Measures:

- Yearly legionella testing included in all water treatment programs.
- Yearly preventative shock treatment included in all water treatment programs.
- Dual biocide program to reduce the possibility of legionella.
- Optional Legionella Advanced Warning system. (available at extra cost)

Legionella Elimination:

- Positive legionella test.
- Shock feeding our biocide over 24 hours to kill all bacterium and slime molds in your cooling system.
- Flush.
- Resume normal biocide application and residual levels.
- Retest for legionella.

A Legionella Water Management Plan is required for facilities accepting Medicare and/or Medicaid funds. A **Lone Wolf Technologies** Legionella treatment program goes above and beyond the CDC recommended dual biocide program to further help prevent legionnaires disease.