

Advanced Boiler Water Automation & Control

3D TRASAR™ TECHNOLOGY FOR BOILERS: PREMIUM PROGRAM

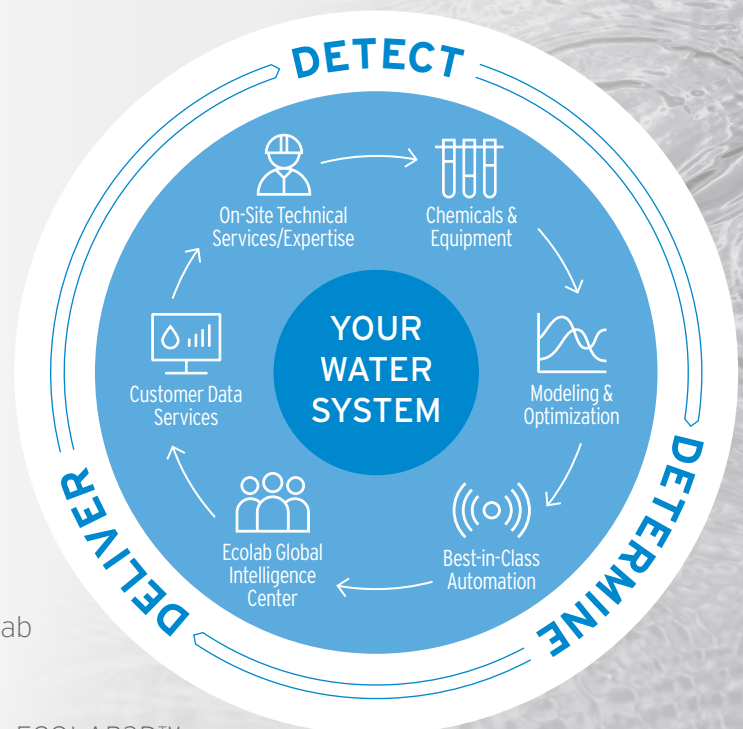
Steam boilers are vital equipment in many facilities. Keeping them running effectively is critical to minimizing operating costs, extending asset life and improving sustainability.

The main threat to boiler system performance is the incoming water supply, where the presence of minerals, among other water quality characteristics, may compromise boiler efficacy:

- Scale deposits on heat transfer surfaces lead to higher energy usage and may result in tube failure
- Dissolved oxygen and pH excursions increase corrosion risk

The 3D TRASAR for Boilers Premium Program provides a complete solution to address your specific needs:

- Connected chemistry to maintain water quality characteristics within specifications:
 - Scale inhibitors
 - Corrosion-reducing chemistries
- 24/7 automation
 - Monitor water quality parameters
 - Automatically adjust chemistry dosages
- Program support via local experts and our extended global network
 - Configure equipment and operating parameters
 - Periodic on-site checks to ensure your system is performing optimally
 - Round-the-clock monitoring and alerts by the Ecolab Global Intelligence Center
- Program insights via Service Intelligence powered by ECOLAB3D™
 - Dynamic performance data from multiple connected sources
 - Diagnostics



How 3D TRASAR Technology Works

Reliable and connected 3D TRASAR programs detect out-of-spec conditions and help determine the appropriate corrective action to deliver exceptional performance.

DETECT

The 3D TRASAR for Boilers Premium Program detects system variability and operational problems

- The Nalco Water Corrosion Stress Monitor™ (NCSM) detects & reacts to preboiler corrosion stress
- Advanced fluorescence tracing technology is used to control boiler scale and deposits

DETERMINE

The 3D TRASAR for Boilers Premium Program determines the appropriate corrective response based on proprietary algorithms

- Compares current conditions to the defined optimum
- Takes or communicates appropriate corrective action
- Provides expert program monitoring and oversight 24/7/365

DELIVER

The 3D TRASAR for Boilers Premium Program supports optimal performance and savings, including:

- Water and energy optimization
- Reliable steam production
- Asset preservation
- Maintenance and labor efficiency
- Plant safety
- Progress toward sustainability goals

eROI CASE STUDIES*



ENERGY

A food processing plant in Northern Europe reduced energy costs by €96,000 per year and realized €4,700 per year in fresh water and wastewater savings.



WATER

A large university improved sustainability, saving \$26,000 per year in energy and water savings from improved boiler blowdown management.



PRODUCTIVITY

An electric power plant reduced the cost of boiler shutdown and startup by approximately \$700,000 per incident, through a combination of decreased start-up time and the ability to plan outages when replacement power costs were low.



PROFITABILITY

A paper mill avoided \$430,000 per day in lost production by minimizing boiler outages related to preboiler corrosion failures.

REAL-TIME

Insight



SWIFT, TARGETED

Action



BETTER

Outcomes

*Source: Nalco Water field trials 2021-2022. Because of factors outside of Ecolab's control, such as water conditions, operational procedures and any other factors, results to be obtained including but not limited to water and cost savings cannot be predicted or guaranteed by Ecolab.