

Total Water Management Services for Cooling Systems

HydroTech Solutions provides water technologies that improve efficiencies of cooling water and heat transfer systems.

Cooling system water management requires continuous monitoring and analysis to operate efficiently. Chillers and cooling towers that remain free of scale reduce operating expense, downtime and maintenance.

24/7 Scale Prevention

Chemical Reduction

24 Month or Less ROI

Total Water Management provides continuous monitoring and data analytics with automated alerts.

Reduced scale and biofouling increase water efficiency, and improve water and energy conservation. This reduces cost and improves system life cycle budgets.

Total Water Management Technology

- HydroFLOW physical water conditioner
- IoT enabled real-time sensors & meters for monitoring flows, temperatures & water quality
- Cloud based platform securely manages and visualizes data on a secure dashboard
- Eco-Friendly water chemistry program
- Side stream filtration systems that reduce suspended solids and debris in water

The Total Water Management program includes monthly site visits to observe equipment, water quality and system operations, and includes field notes and photographs that are included in the monthly report.

Water Management Services

Cooling System Operations – Monthly Inspection

Authorized technicians perform monthly site visits to collect data and photos of system components, including HydroFLOW, Filtration, Sensors and Meters.

HydroFLOW Status	Inspect operating condition, Signal strength
Filtration System	Inspect pressure, filter condition, backflush operation
Cooling Tower	Inspect and document condition, potential for wear, scale, biologicals and visible areas requiring repair
Chiller and Condenser	Inspect Pressure, temperature differential, visible areas requiring repair or maintenance
Sensors and Meters	Inspect sensor condition, test gateway and data transfer equipment. Validate meter readings (Makeup and Blowdown)
Solid Chemistry	Inspect solid chemistry levels. Replenish solid chemistry as required

Water Quality – Monthly Inspection

Conductivity of Influent Water	Total Bacteria Count
Conductivity of Circulating Water	Legionella Lab sample (according Bacteria cfu sample)
Standard Water Chemistry Levels	pH levels

Water Quality – Monthly Report from Inspection and Sensor Data

Monthly PDF report that includes data tables, charts and summary of key operating metrics, with photos from recent inspection

Data for submitting evaporation credits	Link to .csv file download for data
Water use and estimated cost savings	Summary of water quality by analyte
Photographs of equipment, items of interest	Bacteria control summary
Year-to-date & Monthly trends	Alarm history – if occurrences
HydroFLOW and Filtration performance	Summary of findings, exceptions

24/7 Water Monitoring

Monthly Technical Site Visits

Water Management Services Installation Protocol

Baseline data collection prior to initiating the demonstration includes observing existing scale, biological activity and corrosion on the water system equipment, and collecting 12-24 months water consumption data, along with maintenance and repair events and chemical data.

Installation of a *HydroFLOW* physical water conditioner and surge protector on the primary circulating water line for demonstration of scale and biological control on the cooling tower. Installation will not interrupt system operations and will not involve drilling or cutting of piping. Sensors and flow meters installed per location conditions to collect real-time operating data for analysis on the Banyan Water platform.

Objectives

- Improve water system efficiencies while maintaining normal operating conditions to compare against the baseline data collected prior to initiating the demonstration.
- Prevention of scale on cooling towers structures, fill, drift eliminators, and internal cooling system piping.
- Control of Microbiological Growth on cooling towers structures, fill, and internal cooling system piping.
- HydroTech will complete all health and safety training required for entry into the facility, and will coordinate site access and work plan with appointed representatives.
- Solid, eco-friendly water chemistry program initiation is available or existing chemical system can remain in operation. The demonstration provides a 30-day stepdown of 25% for months 2 and 3 for evaluation.

What the Location provides

- Historic chemical use and details of maintenance events for the prior 12-24 months
- 110v electrical outlet in proximity to the *HydroFLOW* installation location

Performance metrics expected

- Water use and cost reduction by approximately 50%
- Existing scale will be softened, with reduced coverage on identified surfaces
- Reduced algae and biofilm present in the system, confirmed by biological testing results
- Cycles of concentration can be safely increased, based on conductivity with reduced chemical use
- Reduced maintenance of cooling tower components
- Data for cooling system that includes real-time pH, Conductivity and water (make-up and blowdown)



Total Water Management Benefits Include

- Improved water system efficiency with real-time monitoring and data analysis
- 50% water conservation and related costs
- 75% less chemical use and improved water quality
- Less than 24 months ROI
- Reduced maintenance due to scale and bio fouling prevention
- Simple, concise reporting of information for decision making
- Eco-friendly solid chemistry with no liquid storage, handling or disposal



HydroFLOW Physical Water Conditioner