

The background of the slide features a photograph of an industrial plant. Large, horizontal green pipes run across the frame, with various valves and machinery visible. A label on one of the pipes reads "CONDENSES WATER FROM TOWER". The image is partially obscured by a white curved banner in the center and a dark blue curved banner at the bottom.

Improve Plant Efficiency with Interphase Materials Nano-Engineered Solution for Heat Transfer Assets

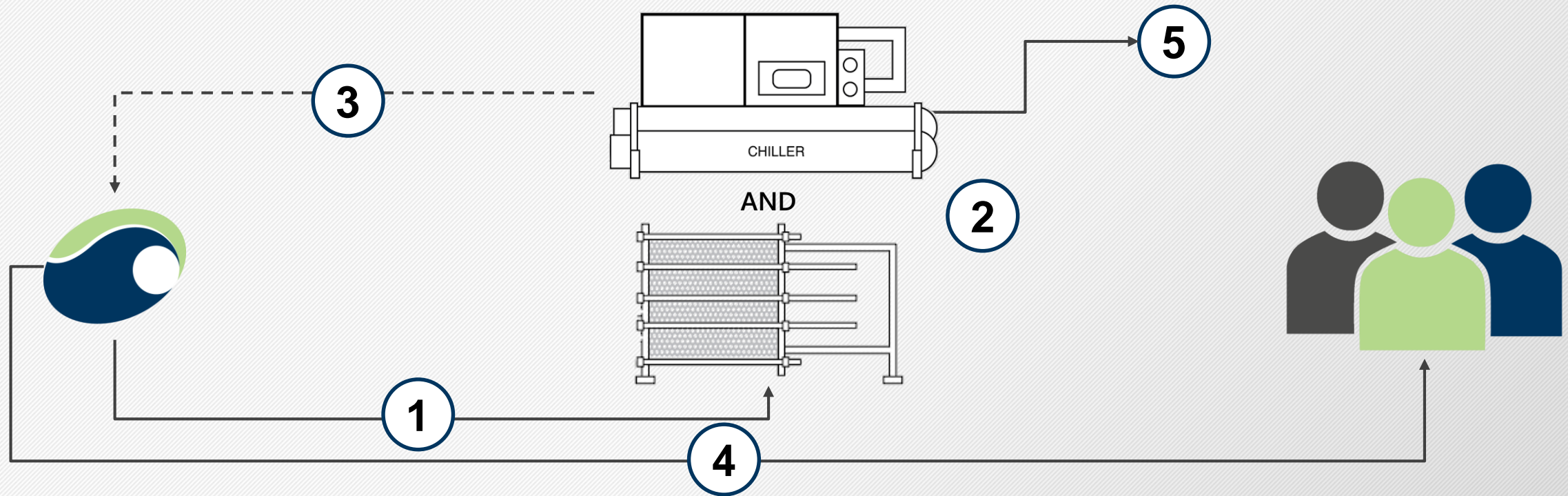






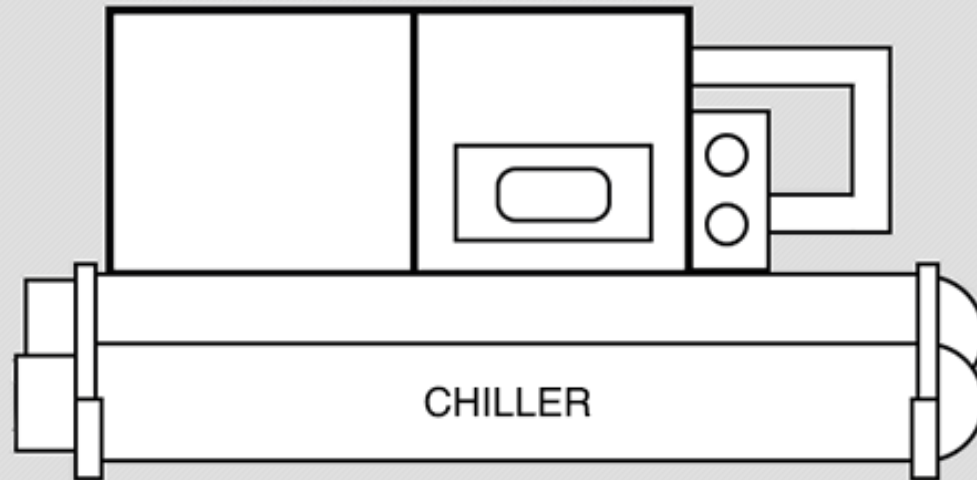


How it Works



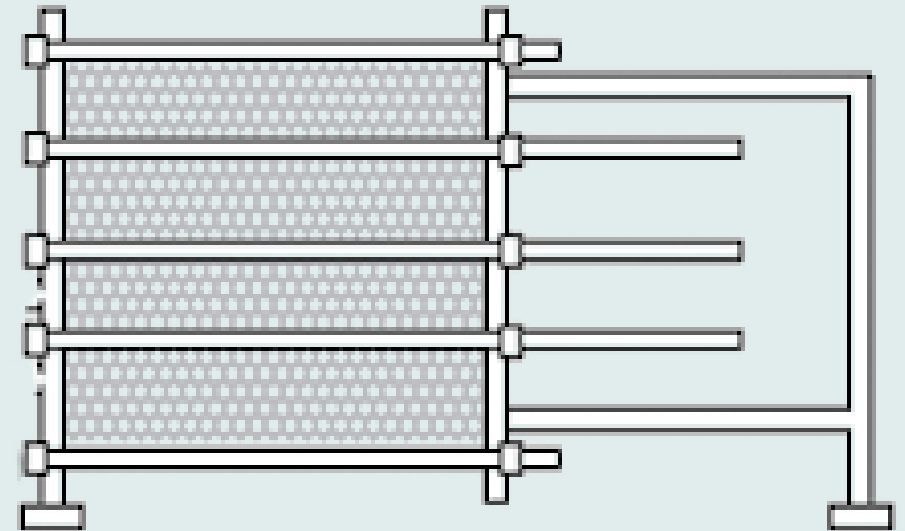
1. **Nano-engineered** technology treats **hardware** through water application
2. **Efficiency increases** above pristine system
3. **Analysis** on performance & operations
4. **Actionable reporting** for business and technical teams
5. **Sustainable**, no toxic chemical discharge

Improved Production Efficiency



**Optimized Chilled Water Production and
System Protection**

Improved Usage Efficiency

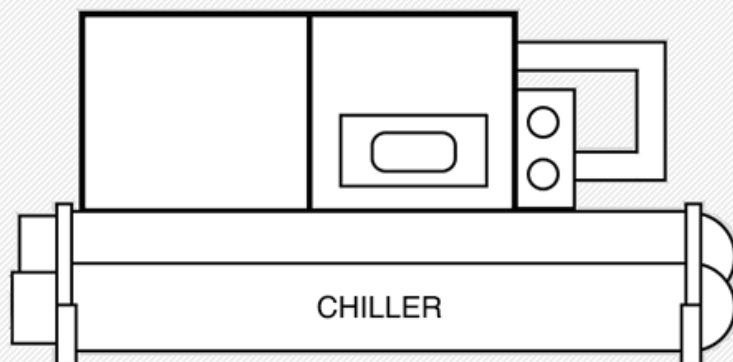


**More Efficient Transmission of Chilled
Water to Customer**

Side-by-Side Experimental Design

Treated

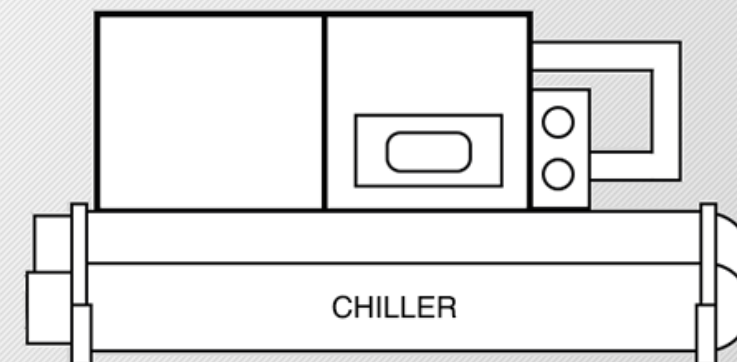
2,000 tons
Centrifugal Chiller
Copper Tubes



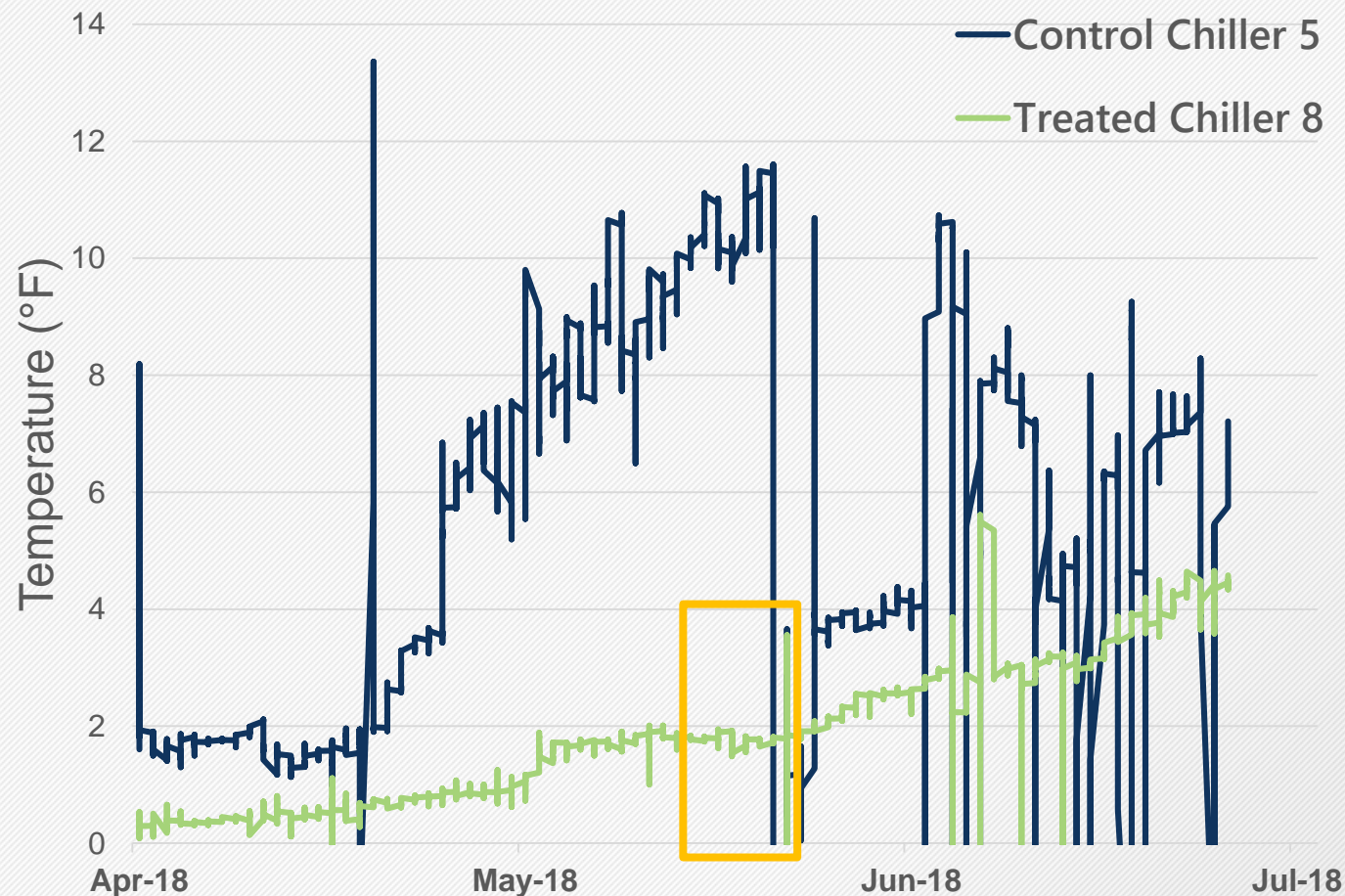
- 3+ Months of Operation
- Monitored approach temperature over-time

Control

2,000 tons
Centrifugal Chiller
Copper Tubes



Improved Production Efficiency

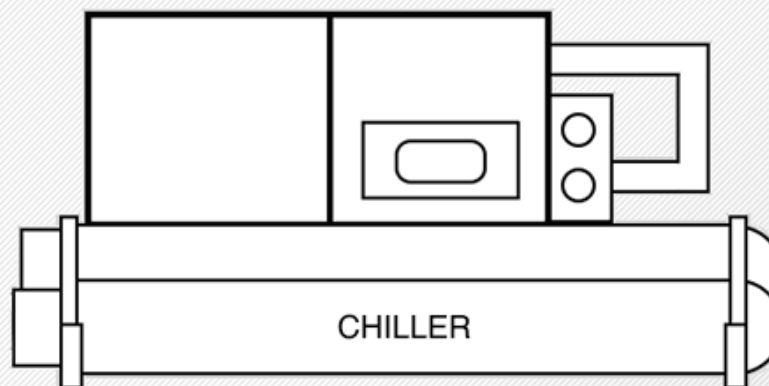


8° F Improvement in Approach Temperature

- Immediate approach temperature improvement
- 2°F Approach Temperature on Treated Chiller
- 10+°F approach on untreated chiller
- Engineers commented, tubes '**like new**' after season of operation

Technology Impact

- Immediately improves chiller efficiency
- Reduces long-term biological & inorganic fouling on chiller tubes



Benefits

- **Saves money** by lowering energy requirements
- **Saves time** by reducing maintenance and down-time
- **Saves environment** through improved energy efficiency of plant

8° F better approach temperature on treated chiller

"Like New" tubes after a full season

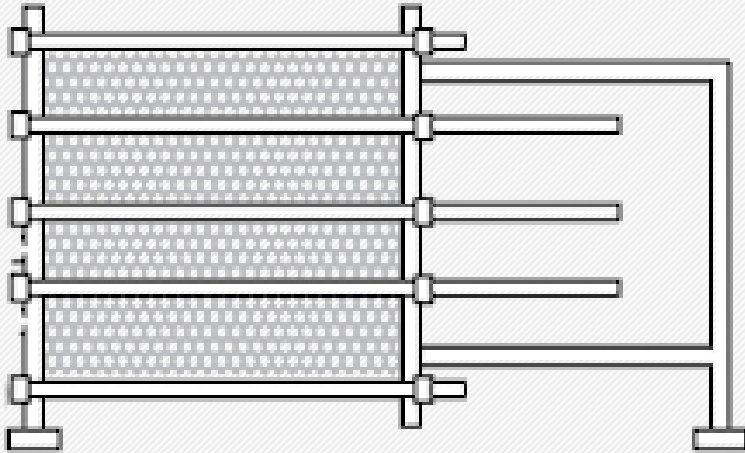
No mid-season cleaning needed

Improved Usage Efficiency

Side-by-Side Experimental Design

Treated

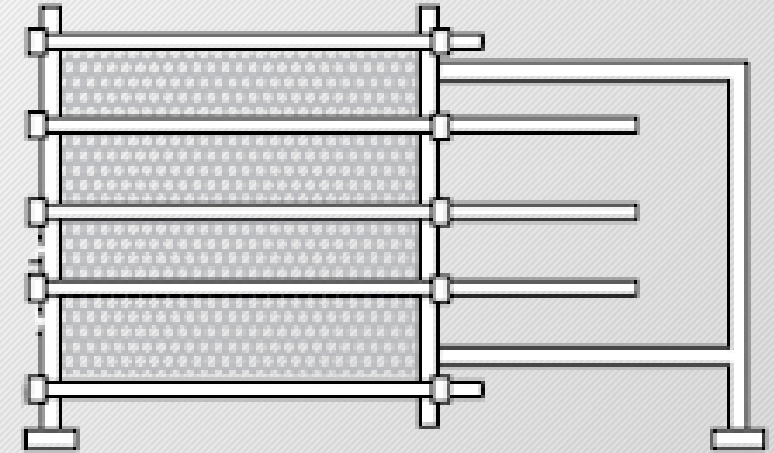
Stainless Steel Plates



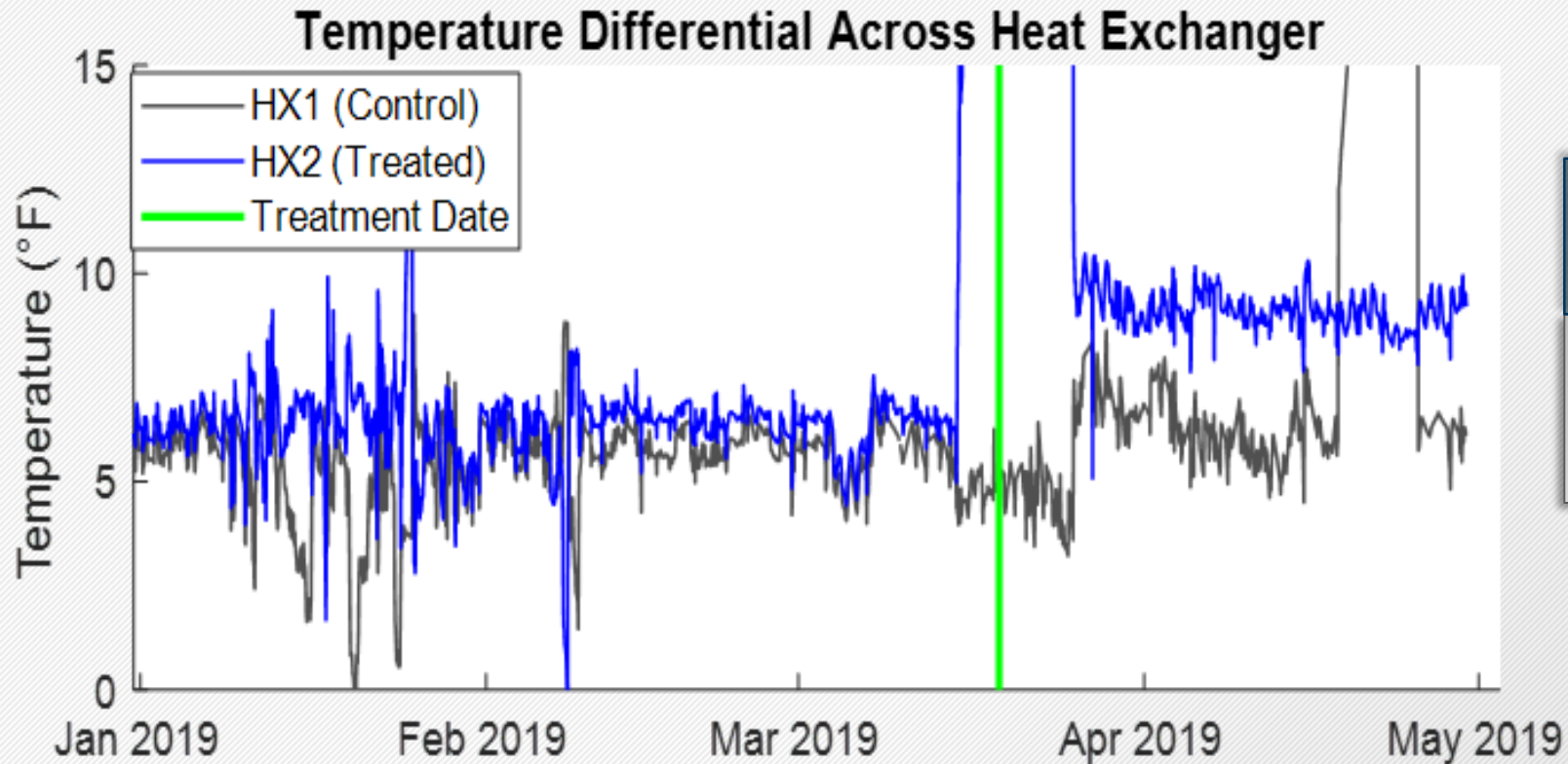
- 7 Weeks of Operation
- ETS Serves Medical Site

Control

Stainless Steel Plates



Improved Usage Efficiency

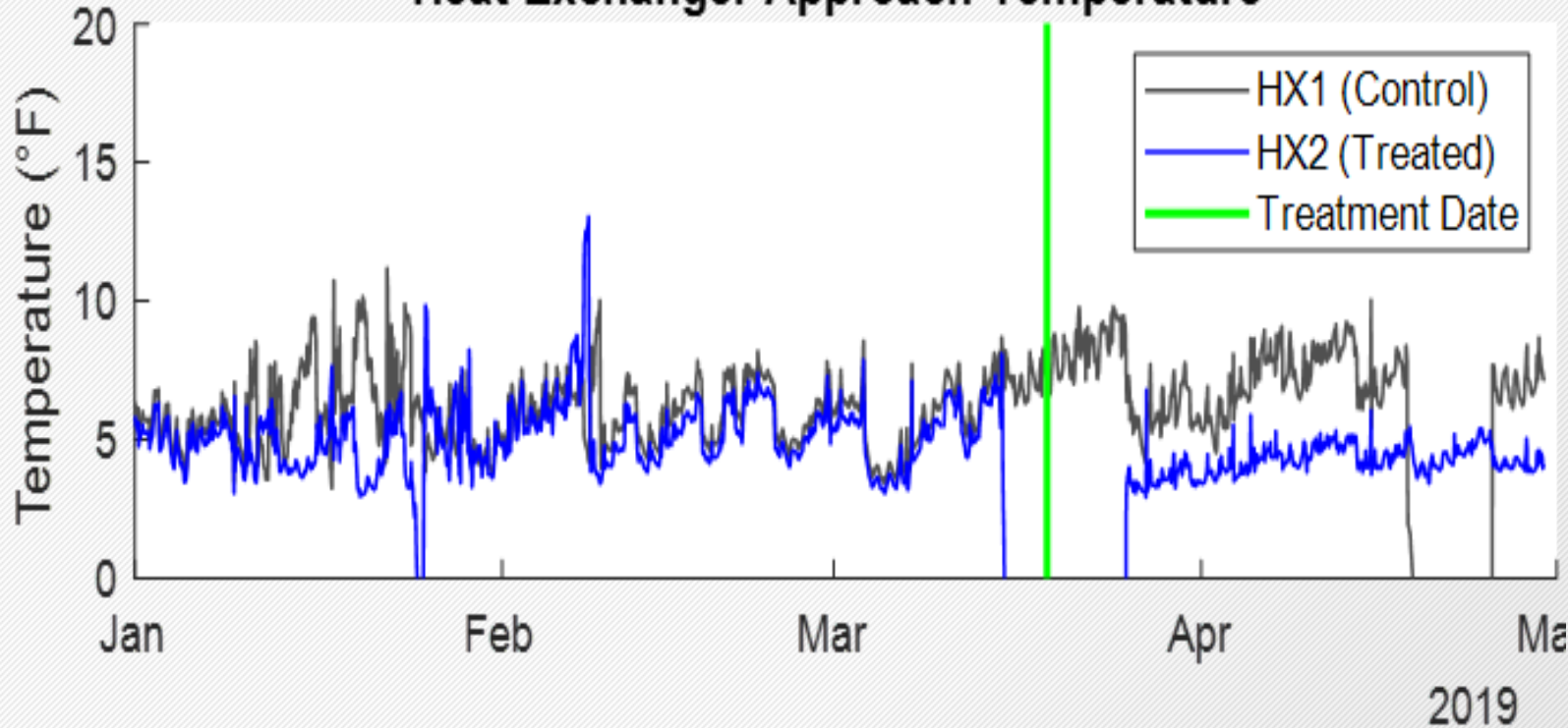


45%
Improved Temperature Differential

- ~ **3°F** temperature differential increase on treated HX

Improved Usage Efficiency

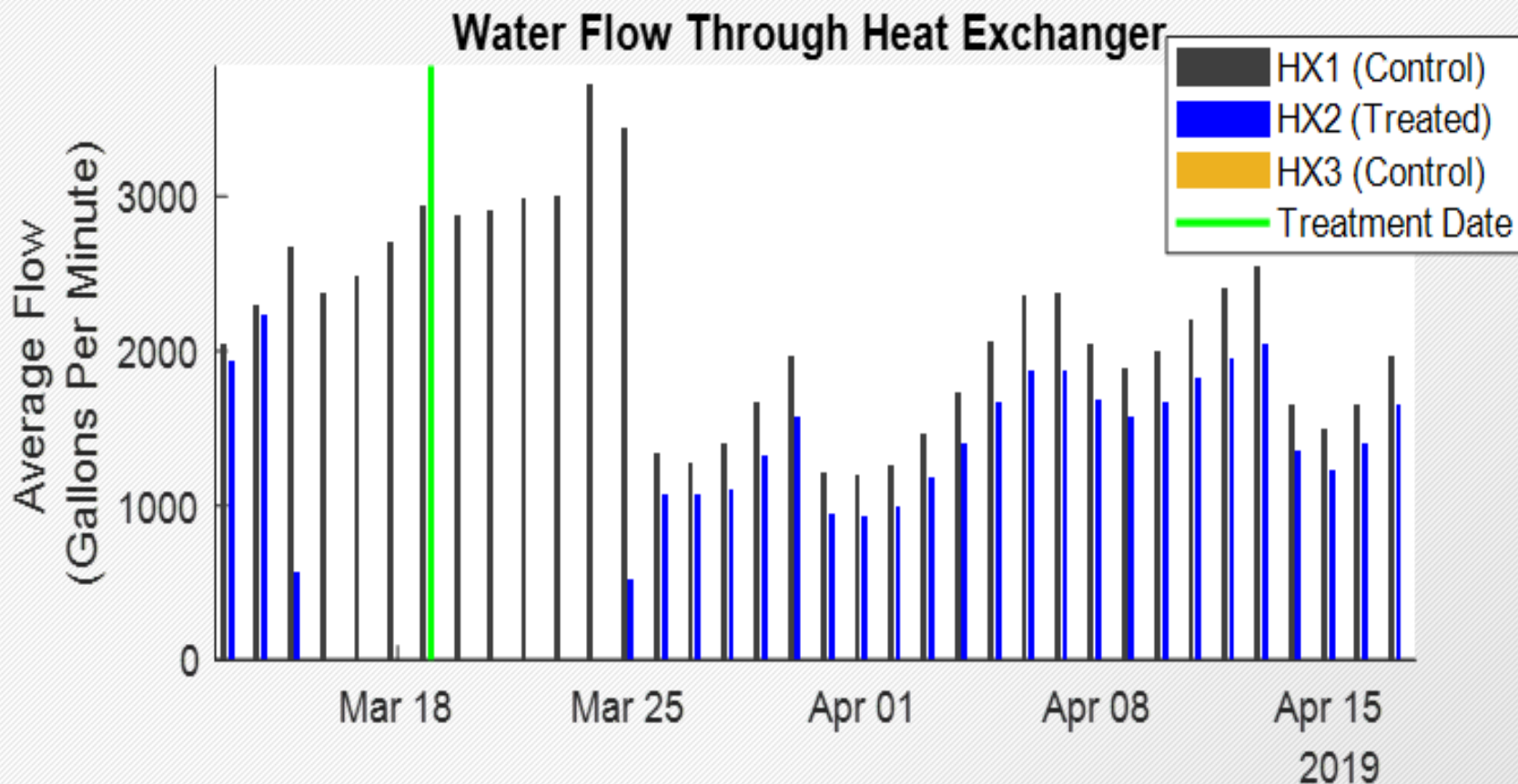
Heat Exchanger Approach Temperature



30%
Reduced Approach Temperature

- **1.7°F reduction** in approach on treated HX Control HX
- Control HX approach increased by **8.0°F**

Improved Usage Efficiency



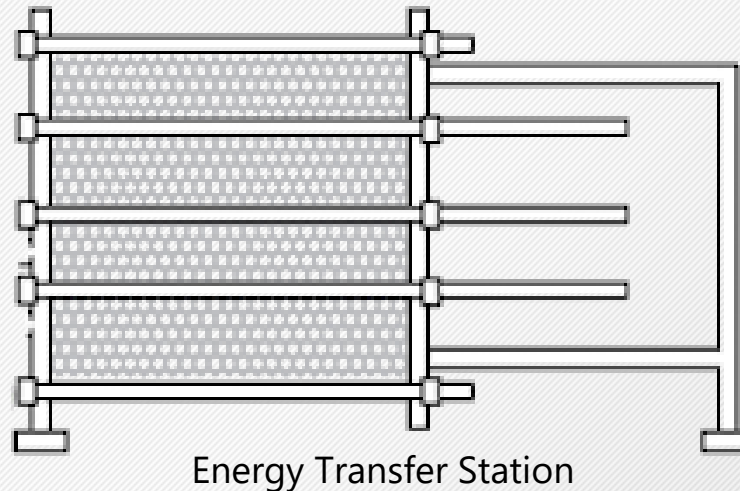
350,000 + Gallons

Daily Water Reduction

- Enabled **5-7%** reduction in valve opening
- **Lower valve % allows for reduced water consumption by 350,000 gallons daily**

Technology Impact

- Immediately improves heat exchanger effectiveness
- Reduces long-term biological & inorganic fouling plate surface



Benefits

- **Saves money** by lowering production requirements for each HX asset
- **Saves time** by reducing maintenance and down-time
- **Saves environment** through reduced water usage



350,000+ Gallons Water Use Reduction

45% Improved Temperature Differential

30% Reduction in Approach Temperature

Holistic Value & Impact

Sustainability

Reduces Energy & Water
Consumption

Eco-Friendly Materials

Enables Sustainable
Operations

Financial Impact

Lowers Energy Spend

Reduces Maintenance Costs

Increases Profits

Maintenance

Limits Need for Mid-
Season Cleaning

Reduces System Down-
Time

Improves Asset
Availability

Questions

