



● COOLING TOWER

Massive Factory Scale Reduction Case Study Texas, USA

HydroFLOW® units enabled high conductivity operation, reducing chemicals by 75% while improving heat transfer and lowering water demand at a large Texas manufacturing facility.

🔒 Client details have been anonymised at their request.

75%

Chemical Reduction

3.5x

Higher Conductivity Operation

5400gal

Annual Water Savings

<1yr

Return on Investment

⇒ **BEFORE & AFTER**

● **BEFORE**

- ✗ Low conductivity was required to prevent scaling
- ✗ High chemical usage for control
- ✗ Scaling across cooling and washer systems

● **AFTER**

- ✓ Higher conductivity achieved safely
- ✓ 75% reduction in chemical use
- ✓ Reduced scaling and longer clean intervals

 **OVERVIEW**

A 5.2 million sq ft equipment manufacturing facility in Texas with over 7,000 employees operated cooling towers and washer systems. The site required significant water savings due to a depleted well supply and ongoing wastewater plant capacity limitations. Scaling across systems reduced efficiency and limited conductivity, increasing chemical use and operational pressure.

 **CHALLENGE**

Water scarcity and wastewater limits required improved efficiency and reduced chemical and water use.

- Well water supply depletion
- Wastewater plant over capacity 8 months/year
- Low conductivity was required to prevent scaling
- High chemical use for system control



SOLUTION

HydroFLOW® units installed on chiller return & washer recirculation lines to enable higher conductivity and reduce scaling.

UNIT INSTALLED

2x HydroFLOW® units (Custom 14" + i100)

INSTALLATION POINT

Chiller return line & washer recirculation

CONDUCTIVITY RANGE

1300 → 4500 µS/cm operation

INSTALL DATE

January 2023



INSTALLATION

Unit on chiller return line



INSTALLATION

Unit on washer recirculation line



SITE

Factory production floor



RESULTS

75% Chemical Reduction

Chemical usage reduced while operating at higher conductivity levels.

Stable Temperatures

Approach temperatures maintained within 1°C

Reduced Scaling

Reduced scaling in washer and cooling systems.

Improved Heat Transfer

Cleaner surfaces improved system heat transfer efficiency.

Water Savings

Estimated 5,400 gallons saved annually

ROI Under 1 Year

Return on investment achieved in less than one year.



TESTIMONIAL

"The chemical company tried everything to convince me that this unit wouldn't work, but the results from HydroFLOW® speak for themselves."

— Facilities Manager

KEY TAKEAWAY

Summary

HydroFLOW® enabled stable high-conductivity operation across cooling and washer systems, reducing scaling, improving heat transfer and lowering operating costs.

75%

CHEMICAL REDUCTION

3.5x

HIGHER CONDUCTIVITY

<1yr

ROI



ADDITIONAL PHOTO EVIDENCE



BEFORE

Tube sheet showing scale deposits before treatment



BEFORE

Scale deposits inside washer system before treatment



INSTALLATION

Additional HydroFLOW® i14 units on remaining loops



INSTALLATION

HydroFLOW® i14 units on chiller return line



INSTALLATION

HydroFLOW® i14 units on chiller return line



PIPEWORK

Process water treatment system and dosing equipment



SITE

Cooling tower system at manufacturing facility



SITE

Chemical storage and treatment area on site

HYDROPATH

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