



● COOLING TOWER

Municipal Building Chiller Water Savings Case Study Arizona, USA

HydroFLOW® unit enabled significant water savings and reduced chemical use in municipal cooling towers while maintaining system performance during a 5.5-month evaluation.

68%

Blow-down Reduction

No

Scale Build-up

7000Conductivity $\mu\text{S}/\text{cm}$ **5.5m**

Trial Duration

**BEFORE & AFTER**

● BEFORE

- ✗ High water usage due to blow-down cycles
- ✗ Continuous chemical dosing required
- ✗ Water scarcity impacted operations

● AFTER

- ✓ Blow-down water reduced by 68%
- ✓ Chemicals reduced to small amounts of biocide
- ✓ System maintained within standards

**OVERVIEW**

A large municipality in Arizona operates cooling towers for HVAC systems in a water-scarce region. Due to drought conditions, reducing water and chemical usage became critical. A 5.5-month evaluation assessed *HydroFLOW*® performance while maintaining within industry standards.

**CHALLENGE**

Water scarcity and high chemical usage created pressure to optimise cooling tower performance.

- Severe water scarcity in Southwest region
- High blow-down water consumption
- Continuous chemical dosing required
- Need to maintain industry standards

SOLUTION

1x *HydroFLOW*® i8" Custom unit was installed on the condenser water line between the tower and chiller, enabling higher conductivity and reduced chemical usage.

UNIT INSTALLED

1x *HydroFLOW*® i8" Custom

INSTALLATION POINT

Condenser water line

CONDUCTIVITY

3,000 to 7,000 $\mu\text{S}/\text{cm}$

TRIAL DURATION

5.5 months



INSTALLATION

i8" on condenser line



SITE

Chiller plant system



MONITORING

7000 $\mu\text{S}/\text{cm}$ reading

RESULTS

68% Water Reduction

Cooling tower blow-down water usage reduced by 68%.

Chemical Reduction

Chemical dosing stopped except small biocide amounts.

High Conductivity

System operated at 7,000 $\mu\text{S}/\text{cm}$ conductivity.

Minimal Scale

Inspection showed minimal soft scale deposits.

Stable Operation

Performance maintained during summer conditions.

Standards Maintained

Cooling system remained within industry standards.

KEY TAKEAWAY Summary

HydroFLOW® unit enabled significant water savings in a municipal cooling tower system. Over 5.5 months, conductivity increased to 7,000 $\mu\text{S}/\text{cm}$, chemicals reduced, and blow-down water decreased by 68% while maintaining performance within industry standards.

68%

WATER REDUCTION

7000

CONDUCTIVITY

5.5m

TRIAL DURATION



ADDITIONAL PHOTO EVIDENCE



MONITORING

Chiller inspection showing minimal soft scale



AFTER

Tube sheet showing minimal soft scale

RELATED CASE STUDY

Commercial Building Cooling Tower Case Study

Honolulu, Hawaii

HydroFLOW® units installed on a commercial building cooling tower in Hawaii eliminated the need for chemical biocides while dramatically reducing water waste through blow-down reduction, delivering over \$121,000 in annual savings with a 3-4 month return on investment.

85% Biocide Reduction

Near-total elimination of chemical biocide dosing on the cooling tower system

50% Blow-down Reduction

Halved water waste by reducing blow-down cycles significantly

\$121K Annual Savings

Combined chemical, water and maintenance cost savings per year



Ready to reduce water and chemical use?

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