

COOLING TOWER

Cooling Tower Water Savings Case Study Las Vegas, Nevada, USA

*Hydro*FLOW® helped a Las Vegas resort reduce cooling tower blowdown, saving an estimated 8 million US gallons and $47,000 annually while eliminating sulphuric acid treatment.

8M gal	~$47k	0	✓
Estimated Annual Water Savings	Estimated Annual Savings	Sulphuric Acid Treatment	No Hard Scale Formation

⇄ BEFORE & AFTER

BEFORE

- High cooling tower blowdown water demand
- Higher conductivity risked hard scale formation
- Sulphuric acid treatment in use

AFTER

- ✓ 8M US gallons saved annually (estimated)
- ✓ Higher conductivity without hard scale
- ✓ Sulphuric acid treatment discontinued

OVERVIEW

A Las Vegas casino resort operates a 1,000-ton cooling tower system in a region where high temperatures and prolonged drought make water conservation a priority. Cooling towers consume substantial amounts of water through evaporation and blowdown. The objective was to increase operating conductivity, reduce unnecessary water discharge and improve water efficiency while keeping the system within the manufacturer's recommended water chemistry limits.

⚠ CHALLENGE

The resort needed to conserve cooling water without increasing scale risks or compromising operation.

- Cooling tower blowdown consumed valuable water.
- Raising conductivity risked hard scale formation.
- Sulphuric acid was used to control water chemistry.

SOLUTION

*Hydro*FLOW® units were installed on the cooling tower recirculating water lines, allowing operators to raise the conductivity setpoint and reduce blowdown.

UNITS INSTALLED	APPLICATION
2x *Hydro*FLOW® i190	1,000-ton cooling tower

INSTALLED	LAST INSPECTION
December 2025	September 2026



INSTALLATION

Unit on recirculation line



SITE

Cooling tower

RESULTS

8M Gallons Saved Annually

Higher conductivity reduced blowdown, saving an estimated 8 million US gallons annually.

Annual Savings (Mainly Water)

Estimated annual savings reached approximately $47,000, mainly from reduced water use.

Sulphuric Acid Eliminated

Operators discontinued sulphuric acid treatment while maintaining stable operation.

No Hard Scale Formation

Hard deposits became fine powder removed by blowdown; no scaling or biofouling was seen in chillers.

KEY TAKEAWAY

Summary

*Hydro*FLOW® reduced cooling tower blowdown, saving an estimated 8 million US gallons and $47,000 annually, mainly through water conservation. Sulphuric acid treatment was discontinued without hard scale formation. Biocide chemicals are yet to be reduced.

Savings calculated using the online Cooling Tower Savings Calculator.

ADDITIONAL PHOTO EVIDENCE



SYSTEM

Cooling equipment at the resort



RESULTS

Fine powder formed instead of hard 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

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