



Smart Water Management for Data Centers

For data centers, cooling is critical for operational success.

Sustainable operations benefit both the data center and the surrounding environment. Nalco Water programs deliver significant value and help data centers achieve optimum results.

As a global leader in water management, Nalco Water serves more than 90,000 customer locations in 30 industries and 130 countries with a full range of products, programs and services that support people, plant and business health.

3D TRASAR™ Technology for Cooling Water helps data centers worldwide conserve water, energy and CO₂ emissions, and reduce waste for cooling water applications. In 2023 alone, 3D TRASAR programs delivered more than \$11.1 million in annualized savings for data center customers.

Carbon footprint is a key concern for many data centers.

Nalco Water is uniquely positioned to help data centers reduce their carbon footprint. As an example, one customer achieved significant CO₂ emissions savings with 3D TRASAR Cooling Water programs across their enterprise of 100+ data centers. The programs helped the customer reduce their annual CO₂ emissions by more than 12,000 metric tons (see Figure 1).*

Nalco Water's scopes 1, 2, and 3 CO₂ emissions allocated to this customer represent less than 0.01% of the customer's annual total reported CO₂ emissions.

CATEGORY	CO ₂ EMISSIONS
Gross CO ₂ emissions savings achieved	14,230 metric tons
Nalco Water scopes 1,2,3 CO ₂ emissions allocation for the data center	1,750 metric tons
Net CO ₂ Emissions Savings Delivered	12,480 metric tons

Fig. 1: Enterprise-wide annual greenhouse gas emissions savings

*Source: Nalco Water customer data, 2022. Because of factors outside of Ecolab's control, such as water conditions, operational procedures and any other factors, results to be obtained including but not limited to water and cost savings cannot be predicted or guaranteed by Ecolab.

2023 eROI Impact

3D TRASAR Technology for Cooling Water programs delivered more than

\$11.1 million

In annualized savings for data centers worldwide

With 3D TRASAR Technology for Cooling Water, Data Centers also saved:



832 million
gallons of water



6 billion
BTUs of energy



76,200
metric tons of CO₂ emissions



5,700
pounds of waste

The programs' positive environmental impact included water, energy and waste reductions as well. Through their 3D TRASAR programs, the customer saved more than 79 million gallons of water and 112 billion BTUs of energy. Select use of 3D TRASAR solid chemistry saved 390 pounds of plastic waste, too, as shown in Figure 2.

CATEGORY	ANNUAL SAVINGS
Water	79,343,000 gallons
Energy	112,401,400,000 BTUs
Waste	390 lbs

Fig. 2: Enterprise-wide annual savings in water, energy and plastic waste

Cooling Water Chemistry Innovation

To further support our customers' operational and sustainability goals, Nalco Water continually invests in chemistry research and development.

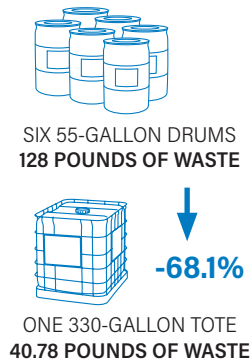
PROGRAM / INNOVATION	PERFORMANCE IMPACT	ENVIRONMENTAL IMPACT
Yellow Metal Corrosion Inhibitors	<ul style="list-style-type: none"> Lowest corrosion rates and copper release compared to commonazole alternatives World-class halogen stability, offering a wide operating window with low consumption rates 	<ul style="list-style-type: none"> 6.4x less toxic to fish than nearest commonazole alternative 1.3x less toxic to invertebrates than nearest commonazole alternative
Low Nutrient Cooling Water Programs	<ul style="list-style-type: none"> Robust performance and wide operating window 	<ul style="list-style-type: none"> Reduced phosphate and zinc in the discharge versus traditional phosphate-based programs
Sustainable Closed-Loop Corrosion Inhibitor	<ul style="list-style-type: none"> Offers superior performance versus traditional molybdate or organic technologies, maximizing corrosion protection 	<ul style="list-style-type: none"> Borate-, nitrite- and molybdate-free treatment No known ecotoxicological effects No nitrite and phosphonates, combined with the product's high buffer capacity, allows for strong biostability in the application

Packaging Innovation

To help reduce plastic waste, Nalco Water aims to minimize plastic packaging by transitioning to reusable, steel bulk containers.

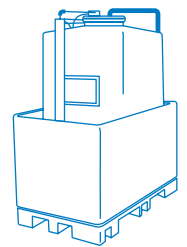
Plastic Reduction: Reusable Totes

By delivering products in one 330-gallon intermediate bulk container (IBC) instead of six 55-gallon drums, we save 87.2 pounds of plastic. Nalco Water's drums and IBCs are reusable for up to three years. This reduces the number of new 55-gallon plastic drums required by approximately 24%, and the number of new IBCs by more than 25%.



Plastic Reduction: Porta-Feed™ Containers

Since 1985, the Porta-Feed program uses reusable steel bulk containers for chemical deliveries instead of single-use plastic drums to further reduce plastic waste.



Contact your local Nalco Water representative to learn more about how our programs can help support your sustainability efforts.

Nalco Water, an Ecolab Company

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