VOLTEA WATER

ROI FEATURE

AUTOMOTIVE PAINT LINE - OHIO, U.S.A.
ROI PAYBACK: 3 MONTHS

Automotive Plant Recovers 1.8 Million Gallons of Water Annually with Cutting-Edge Water Treatment Technology



INTRODUCTION & PROCESS DESCRIPTION

High water consumption is extremely common in the automotive industry, with nearly 39,000 gallons of water required to produce a single car.

An automotive plant based in Ohio, U.S.A., faced this challenge daily—manufacturing seven different vehicle models while generating millions of gallons of wastewater in the process.
The plant's very low water recovery rate was not only an environmental concern, but it was also costing the company hundreds of thousands of extra dollars each year in water treatment and labor.
The facility was ready to move away from its traditional, outdated technology and invest in a modern, innovative water treatment system that would quickly prove its value.

THE CHALLENGE: LOW WATER RECOVERY; HIGH COSTS

Automotive manufacturing—including paint and coating operations—requires extremely pure water, which meant the Ohio plant's incoming municipal water had to be heavily treated.
The facility considered standard treatment technologies, but none offered a sustainable, long-term solution for energy savings, cost reductions, and wastewater minimization.

With traditional chemical-based treatment methods, the plant faced very high operating costs and an extremely labor-intensive process that only added to the overall expense. Water quality would also need to be constantly monitored and adjusted depending on the incoming supply.

In addition, the chemicals used to treat the water made it unsafe for recycling, creating a large volume of wastewater that required extensive treatment before disposal.
The automotive manufacturer needed a simpler, more cost-effective solution to reduce wastewater production and decrease its reliance on city water.

VOLTEA'S CAPDI SOLUTION: DISRUPTIVE WATER TREATMENT TECHNOLOGY

It was time to implement a new water treatment method that would reduce the plant's workload, increase the water recovery rate, and lower overall costs.

Voltea's revolutionary Membrane Capacitive Deionization (CapDI)—a salt-free, chemical-free water purification technology—treated all wastewater by removing salt ions and total dissolved solids (TDS) through an electrical current.

The Industrial Series 12 (IS-12) System installed at the facility enabled the plant to reduce municipal water intake and decrease wastewater production. The technology lowered conductivity to levels equal to or better than city water quality, allowing the treated water to be recycled back into the pretreatment process. This saved the plant over one million gallons of water.

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This innovative technology stands out from other methods on the market because it tunably adjusts the feedwater regardless of its quality.
There's no need for operators to manually adjust the system to achieve the perfect water quality. Instead, they simply set the desired output quality, and the CapDI technology maintains that level automatically through self-monitoring.



THE RESULTS: IMPROVED SUSTAINABILITY AND SAVINGS

After implementing Voltea's CapDI technology, it didn't take long for the automotive plant to see impressive results, including:

- $100,000 in annual labor savings
- 1,875,000 gallons of water recovered every year

"Traditional water treatment methods were not only expensive, but extremely inefficient to operate," said the automotive executive. "Having Voltea's system in place has been greatly beneficial! We've been able to significantly improve our sustainability efforts while decreasing operating expenses. And the best part is, the technology helped us achieve all of that within just three months."
Making the switch to a cutting-edge technology allowed the world-class car manufacturer to produce and recycle world-class-quality water to match.

ANNUAL LABOR SAVINGS

$100,000

ANNUAL WATERRECOVERY

1.875M GAL

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