

Ethanol Evaporator Treatment: **EFX-5000** + **EFX-6000** Case Study



Improving Evaporator Performance with EFX 5000 + EFX 6000

OVERVIEW

In ethanol production, evaporator performance plays a critical role in maintaining throughput and overall plant efficiency. Clean-In-Place (CIP) programs must balance effectiveness, safety, and cost, but traditional chemistries often fall short in preventing fouling without increasing operational expense. A Midwest ethanol facility sought a more effective, cost-efficient solution to improve evaporator performance and reduce downtime.

BACKGROUND

A 100 MMGPY ethanol facility in central South Dakota was experiencing persistent evaporator fouling, leading to increased downtime, reduced throughput, and rising maintenance costs. The plant was using an existing treatment program but needed a solution that could improve system performance while maintaining or reducing overall treatment spend. Their top priority was increasing production efficiency without exceeding operational budgets.



BENEFITS



Reduced Chemical Usage



Increased Site Safety



Increased Equipment Longevity



Decreased Downtime

CHALLENGES

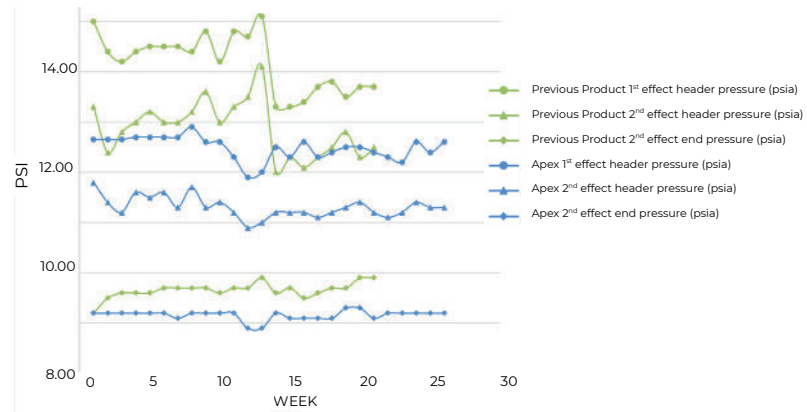
The facility's evaporators were impacted by both mineral and organic fouling, **resulting in elevated delta pressures and frequent cleaning cycles.** The existing chemistry program was not effectively preventing buildup, making cleaning during shutdowns more difficult and time-consuming. Reducing downtime while maintaining throughput was essential to improving production efficiency and profitability.

SOLUTIONS

Apex implemented a two-part treatment strategy using EFX 5000 and EFX 6000, applied across both evaporator effects to optimize performance.

The program included installation support, foulant analysis, and ongoing monitoring of key metrics such as pressure, steam load, and throughput.

Without requiring major system changes, the solution delivered more stable operation, reduced pressure variability, and improved cleanability during scheduled outages.



RESULTS

Following a successful trial, the program was fully implemented across the facility. The plant experienced improved evaporator cleanliness, reduced fouling rates, and lower overall treatment costs.

- **Reduced treatment spend**
- **Slower rate of pressure increase across evaporators**
- **Improved cleaning efficiency during shutdowns**
- **Full-scale adoption following successful trial**

Additionally, as shown in the performance chart above, the Apex program delivered more stable pressure trends compared to previous products—indicating improved system performance and fouling control.

Learn more



Why Apex?



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Reliable Operations



Timely Support

CONTACT US

Learn more about how Apex can help you simplify water and process so you can focus on running safe, efficient, and sustainable operations.



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