Reference Case

Cutting cost-to-treat and improving program performance with advanced chemistry

CarboNet

One of North America's largest dairy producers operates a wastewater facility in California treating 3,000,000 GPD of process water from mozzarella, whey, and lactose production. Meeting clarity targets required excessive polymer doses, pushing annual chemistry costs over $800,000.

Background:

The site's process includes DAFs following high-rate digesters, with downstream SBRs for reuse irrigation and mobile belt presses for solids. It recycles effluent water from the belt presses back into their system, making Total Suspended Solids (TSS) capture efficiency a critical performance parameter.

Problem:

Managing high solids loads and variable influent with the current polymer program left little margin for error. DAF flocculant doses regularly ran at 25–45 ppm, while belt-press doses averaged 150 ppm to keep effluent TSS within spec and maintain consistent press performance. But even with aggressive dosing, clarity and cake dryness could fluctuate during peak production. The plant's team initiated a review of treatment chemistry to identify opportunities for dose reduction, cost savings, and more stable day-to-day operation.

Approach:

CarboNet ran a production-scale trial of chemistry changes on both the DAF and belt press systems with a goal of reducing polymer consumption while maintaining or improving clarity, press performance, and day-to-day reliability. The switch required no changes to equipment or make-down routines. Products selected:

SimpleFloc 10080C: Used on the DAF.

SimpleFloc 4061C-E1: Used on the belt press.

Results:

Satisfied with the performance, CarboNet chemistry was selected to run in production. The switch to SimpleFloc had a measurable impact on both performance and cost with no system modifications required. The total program savings are estimated at $88,000 annually.

The new treatment program consistently maintained DAF clarity below the established KPI of 600 mg/L TSS, achieving a higher percentage of on-spec operating time compared to the previous program. Operators reported no adverse effects on DAF cycle timing, float formation, or rake performance.

RESULTS

- 11% reduction in polymer costs
- $88,000 annual savings (estimated)
- Reduced labor needs for chemical handling

CarboNet: As freshwater becomes increasingly scarce and regulated, companies from energy and mining to food and beauty turn to CarboNet to reduce, recycle, and renew the water they need to compete.