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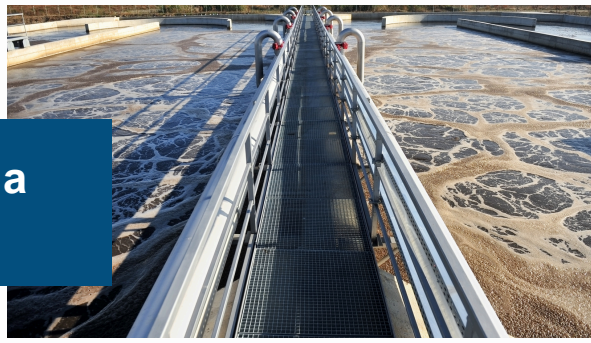
Solutions for a clean environment

Case Study
Industrial



Holistic Wastewater Treatment Optimization at a Large Pork Processing Facility

Results at a Glance

- Significant reduction in H_2S concentration throughout the system
- New flocculants and coagulants at the DAFs reduced H_2S loadings significantly and markedly reduced surcharges
- Reduction in loadings into the anaerobic lagoons enhanced biological stability and further reduced H_2S levels
- Significant reduction in total hydrogen peroxide demand while more effectively meeting H_2S compliance targets

The Challenge

A large pork processing plant was facing mounting pressure from rising chemical costs, increasing municipal surcharges, and evolving safety standards around hydrogen sulfide (H_2S) management in its wastewater operations. The core issues they wanted to address included:

- Elevated H_2S levels and associated hazards
- Rising chemical expenditures that were not yielding sufficient results
- Significant wastewater surcharges
- Overall system performance

In need of support, the plant turned to their water treater in partnership with USP Technologies.

USP Technologies' Solution

To understand the full scope of the problem, USP Technologies conducted a comprehensive site survey and analysis of the plant's wastewater pretreatment system – reviewing historical operating data, evaluating existing chemical dosing strategies, performing jar testing with alternative chemistries, and carrying out a sulfur mass balance across the entire system.

Based on the results of these assessments, USP Technologies proposed a full-scale trial of a new chemical treatment program. This program included:

- New coagulants and flocculants at the DAFs
- Optimized dosing schedules for coagulants and polymers
- Continuous H_2S monitoring at high-risk locations
- Meticulous data collection
- Third-party analysis of critical parameters (BOD, TKN, TSS, and FOG)

Key Results

The full-scale trial demonstrated a measurable reduction in H_2S concentrations throughout the pretreatment system, effectively mitigating the H_2S concerns and identified safety hazard. Some of the results included:

- New coagulants and flocculants at the DAFs reduced H_2S loadings significantly
- Loadings into the anaerobic lagoons decreased markedly, enhancing biological stability and reducing biogas H_2S levels
- Reduced hydrogen peroxide demand downstream to meet compliance targets, reducing hydrogen peroxide costs
- A significant reduction in total surcharges as a result of these program enhancements and adjustments

Overall, the new program resulted in significant annual savings, enhanced systemwide performance, and improved plant safety.

Want to learn more about how USP Technologies can help enhance your processes to reduce costs, improve performance, and enhance safety?
Connect with our team today.

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